



OECD Studies on Water

Water Governance in OECD Countries

A MULTI-LEVEL APPROACH



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Foreword

Managing and securing access to water for all is not only a question of money, but equally a matter of good governance. OECD previous work on water concluded that the solutions needed for the water crisis do exist and are well-known. The real challenge is implementing these solutions, tailoring them to local contexts, overcoming obstacles to reform and bringing together the main actors from different sectors to join forces and share the tasks and risks.

Water is essentially a local issue; it involves a plethora of stakeholders at basin, municipal, state, national and international levels and poses tremendous challenges for managing interdependencies across policy areas and between levels of government. In the absence of effective public governance, policy makers inevitably face obstacles to effectively designing and implementing water reforms. They often stem from the hyper-fragmentation of roles and responsibilities, low financial and technical capacity, asymmetry of information, poor regulatory, as well as institutional and integrity frameworks. Better governance is therefore crucial for efficiently managing the increasingly limited water resources on Earth, determining the affordability of investment plans, securing the sustainability and quality of service provision and encouraging the appropriate participation of all stakeholders – including the private sector and local communities.

There is thus a need for better management of multi-level governance of water policy, both horizontally and vertically among different institutions. There is no one-size-fits-all answer, magic blueprint or panacea to respond to governance challenges in the water sector, but rather a plea for home-grown and place-based policies integrating territorial specificities and concerns. The institutions in charge of water management are at different developmental stages in different countries, but common challenges occur – including in the most developed countries – and can be diagnosed *ex ante* to provide adequate policy responses. To do so, there is a pressing need to take stock of recent experiences, identify good practices and develop pragmatic tools to assist different levels of governments and other stakeholders in engaging effective, fair and sustainable water policies.

The purpose of this report is precisely to provide this platform of comparison and practices, while investigating the “black-box” of water policy making to understand better who does what, at which level of government, and how water policy is designed, regulated and implemented. The objective is to identify the main multi-level governance challenges across OECD countries, as well as governance instruments adopted in response. The ultimate goal of this work is not to rank countries but to report on existing multi-level governance gaps. The report does not provide a detailed picture of the governance challenges of each of the 17 countries surveyed either, but rather gives an overview of common gaps and policy responses and a typology for countries facing similar challenges. Given that there is no “optimality” in water governance, a strict comparison of institutional systems to extract good practices was not considered as feasible.

This report is above all a means for countries i) to carry out a self-assessment to determine where improvements are possible and desirable, and ii) to identify other countries dealing with similar issues. Its conclusions should be linked to the wider background of water policy making, including environmental, cultural, economic and social factors, all of which are decisive in the way water is

managed. The report is thus conceived as a preliminary step for further in-depth OECD research into water governance in different countries, to measure the quality of outcomes of the various structures in place and provide practical and place-based guidance to local and national governments on how to improve their governance systems. This will take place within the framework of policy dialogues with OECD and non-OECD member countries at different territorial levels.

The readers targeted by this report are policy makers in both OECD and non-OECD countries, concerned with water, environmental, territorial development and governance issues. The report is also intended to be accessible to non-specialists readers. With this in mind, it tries to be jargon-free and sparing in its use of technical vocabulary.

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This report was written and co-ordinated by Aziza Akhmouch, from the *Regional Development Policy Division* of the *Public Governance and Territorial Development Directorate*. It was elaborated under the supervision of Claire Charbit, Head of the *Multi-level Governance Unit* and the direction of Joaquim Oliveira Martins, *Head of the Regional Development Policy Division*.

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Acronyms and Abbreviations*

3Ts	Taxes, Tariffs, Transfers – n/a
AATO	<i>Autorita' di Ambito Territoriale Ottimale</i> (Intermunicipal bodies) – Italy
ACCC	Australian Competition and Consumer Commission – Australia
AL	<i>Administraciones locales</i> (Local Administrations) – Spain
AMH	<i>Asociación Mexicana de Hidráulica</i> (Mexican Hydraulic Association) – Mexico
ANEAS	<i>Asociación Nacional de Empresas de agua y Saneamiento</i> (National Association of Water and Sanitation Utilities) – Mexico
APDA	Portuguese Association of Water Distributors – Portugal
APRH	Portuguese Association of Water Resources – Portugal
ARH	Hydrographic Region Administrations – Portugal
ARPA	<i>Agenzia Regionale di Protezione Ambientale</i> (Regional Environmental Protection Agency) – Italy
ASL	<i>Azienda sanitaria locale</i> (Local health agency) – Italy
AYU	<i>Ayuntamientos</i> (Municipalities) – Spain
BEO	Basic Environmental Office – Korea
BOM	Bureau of Meteorology – Australia
CA	<i>Comunidades Autonomas</i> (Local Communities) – Spain
CADC	<i>Comité de co-ordinación y co-operación con Portugal en materia de aguas</i> (Committee for Co-ordination and Co-operation with Portugal for Water-Related Affairs) – Spain
CAN	National Water Council – Portugal
CBI	Confederation of British Industries – UK
CCC	<i>Comisión Chilena del Cobre, Ministerio de Minería</i> (Chilean Commission of Copper) – Chile
CCHH	<i>Confederación hidrográfica</i> (River Basin Authority) – Spain
CCIEP	Co-ordination Committee for International Environmental Policy – n/a
CCPIE	<i>Comité de concertation de la politique internationale en matière d'environnement</i> (Consultation Committee for international environmental policy) – Belgium
CCW	Consumer Council for Water – UK
CEDEX	<i>Centro de Estudios y Experimentación de Obras Públicas</i> (Centre for Studies and Experimentation of Public Works) – Spain
CEMCAS	<i>Centro Mexicano de Capacitación en Agua y Saneamiento</i> (Mexican Centre of Training in Water and Sanitation) – Mexico
CFE	<i>Comisión Federal de Electricidad</i> (Federal Commission of Electricity) – Mexico
CGS	Colorado Geological Survey, Department of Natural Resources – USA
CGWC	Colorado Ground Water Commission, Department of Natural Resources – USA

* Many of these acronyms and abbreviations are country specific, those that are not, are listed as n/a.

CICM	<i>Colegio de Ingenieros Civiles de México</i> (Mexican College of Civil Engineers) – Mexico
CIPE	Interministerial Committee for Economic Planning – Italy
CIW	Committee on Integrated Water Policy – Belgium (Flanders)
CLG	Department for Communities and Local Government – UK
CNE	<i>Comisión Nacional de energía</i> (National Energy Commission) – Chile
CNEAU	<i>Comité national de l'eau</i> (National Water Committee) – France
CNR	<i>Comisión Nacional de Riego</i> (National Commission for Irrigation) – Chile
COFEPRIS	<i>Comisión Federal para la Protección contra Riesgos Sanitarios</i> (Federal for the Protection Against Health Risks) – Mexico
CONAFOR	<i>Comisión Nacional Forestal</i> (National Forestry Commission) – Mexico
CONAGUA	<i>Comisión Nacional del Agua</i> (National Water Commission) – Mexico
CONAMA	<i>Comisión Nacional de Medio Ambiente</i> (National Commission for the Environment) – Chile
CONAVI	<i>Comisión Nacional de Vivienda</i> (National Housing Commission) – Mexico
CONVIRI	<i>Commissione Nazionale di Vigilanza sulle Risorse Idriche</i> (National Committee supervising the use of water resources) – Italy
CRH	Regional Water Councils – Portugal
CTOOH	<i>Comité Técnico de Operación de Obras Hidráulicas</i> (Technical Steering Committee for Hydraulic Works) – Mexico
CWCB	Colorado Water Conservation Board – USA
Dbuilding	Department of Building and Housing – New Zealand
Dconservation	Department of Conservation – New Zealand
DEFRA	Department for Food and Rural Affairs – UK
DEI	Public Power Corporation – Greece
DEWHA	Department of the Environment, Water, Heritage and the Arts – Australia
DEYATH	Company for domestic water and wastewater treatment of Thessaloniki – Greece
DFO	Department of Fisheries and Oceans – Canada
DGO3	Environmental and Agriculture Administration – Belgium
Dinternal	Department of Internal Affairs – New Zealand
DMPW	Department Mobility and Public Works, Flemish Government – Belgium
DNR	Department of Natural Resources – USA
DPHE	Department of Public Health – USA
DR	<i>Departamentos regionales</i> (Regional Departments) – Spain
DUIS	<i>Desarrollos Urbanos Integrales sostenables</i> (Sustainable Urban Development) – Mexico
DWI	Drinking Water Inspectorate – UK
DWR	Division of Water Resources, Department of Natural Resources – USA
EA	Environment Agency – UK
EC	Environment Canada – Canada
EMC	Environment Management Corporation – Korea
ERSAR	Regulatory Agency of Water and Wastewater Services – Portugal
EU	European Union
EYDAP	Company for domestic water and wastewater treatment of greater Athens – Greece
FCO	Flood Control Office – Korea

FEMP	Spanish Federation of Municipalities and Provinces – Spain
FENACORE	National Federation of Irrigation Communities of Spain – Spain
FONADIN	<i>Fondo Nacional de Infraestructura</i> (National Infrastructure Fund) – Mexico
FONDEN	<i>Fondo Nacional de Desastres Naturales</i> (National Natural Disaster Fund) – Mexico
FSA	Food Safety Authority – New Zealand
HC	Health Canada – Canada
HIC	Hydrologic Information Centre – Belgium
IBCC	Interbasin Compact Committee, Colorado Water Conservation Board – USA
IGME	<i>Instituto Geológico y Minero de España</i> (Geological and Mining Institute) – Spain
IIUNAM	<i>Instituto de Ingeniería de la Universidad Nacional Autónoma de México</i> (Engineering Institute of the National Autonomous University of Mexico) – Mexico
IMTA	<i>Instituto Mexicano de Tecnología del Agua</i> (Mexican Institute of Water Technology) – Mexico
INAG	Water Institute – Portugal
INTERAPAS	<i>Organismo Intermunicipal Metropolitano de Agua Potable, Alcantarillado, Saneamiento y Servicios Conexos de los Municipios de Cerro de San Pedro, San Luis Potosí y Soledad de Graciano Sánchez</i> (Metropolitan Intermunicipal Organisation of Drinking Water, Sewage, Sanitation and Related Services for the Municipalities of Cerro de San Pedro, San Luis Potosi and Soledad de Graciano Sanchez) – Mexico
IWA	Israeli Water Authority – Israel
IWRM	Integrated Water Resources Management – n/a
KR	Korea Rural Community Corporation – Korea
KWATER	Korea Water Resources Corporation – Korea
LIFE	EU financial instrument supporting environmental and nature conservation projects – n/a
LWF	Land and Water Forum – New Zealand
MAEC	<i>Ministerio de Asuntos Exteriores y Cooperación, Relaciones internacionales</i> (Ministry of Foreign Affairs, Co-operation and International Relations) – Spain
MAGRI	<i>Ministère de l'Agriculture</i> (Ministry of Agriculture) – France
MAGRI	Ministry of Agricultural, Food and Forestry Policies – Italy
MAGRI	Ministry of Agriculture, Forestry and Fisheries – Japan
MAGRI	Ministry of Agriculture and Fisheries – New Zealand
MAOT	Ministry of the Environment and Spatial Planning – Portugal
MARM	<i>Ministerio de Medio Ambiente y Medio Rural y Marino</i> (Ministry of Environment, Rural and Marine Areas) – Spain
MDBA	Murray-Darling Basin Authority – Australia
MECODEV	Ministry of Economic Development – Italy
MECON	Ministry of Economy, Trade and Industry – Japan
MED	Ministry of Economic Development – New Zealand
MEEDDM	<i>Ministère de l'Écologie, de l'Énergie, du Développement durable et de la Mer</i> (Ministry of Ecology, Energy, Sustainable Development and Maritime Affairs) – France
MENVI	Ministry of Environment, Energy and Climate Change – Greece
MENVI	Ministry for the Environment, Land and Sea – Italy
MENVI	Ministry of Environment – Japan
MENVI	Ministry for the Environment, Land and Sea – Directorate for Territory and Water Resources – Italy
(DTW)	

MENVIRON	Ministry for the Environment – New Zealand
MHEALTH	Ministry of Health – Italy
MHEALTH	Ministry of Health, Labour and Welfare – Japan
Mhealth	Ministry of Health – New Zealand
Mhousing	Ministry of Housing, Spatial Planning and the Environment – Netherlands
MHSS	Ministry for Health and Social Solidarity – Greece
MIE	Ministry of Infrastructure and the Environment – Netherlands
MINAGRI	Ministerio de Agricultura (Ministry of Agriculture) – Chile
MIND	Ministère de l'Industrie (Ministry of Industry) – France
MINECO	Ministerio de Economía (Ministry of Economy) – Chile
MINFRA	Ministry for Infrastructure, Transport and Networks – Greece
MINFRA	Ministry of Infrastructure and Transport – Italy
MINSALUD	Ministerio de Salud (Ministry of Health) – Chile
MINT	Ministère de l'Intérieur (Ministry of the Interior) – France
MINT	Ministry of Interior – Greece
MINT	Ministerio del Interior (Ministry of the Interior) – Spain
MITC	Ministerio de Industria, Turismo y Comercio (Ministry of Industry, Tourism and Commerce) – Spain
MKE	Ministry of Knowledge and Economy – Korea
MLIT	Ministry of Land, Infrastructures and Transport: Water Resources Department – Japan
MLTM	Ministry of Land, Transport and Maritime Affairs – Korea
MOA	Ministry of Agriculture – Israel
MOE	Ministry of Environment – Korea
MOEP	Ministry of Environmental Protection – Israel
MOF	Ministry of Finance – Israel
MOFAFF	Ministry of Food, Agriculture, Forestry and Fisheries – Korea
MOH	Ministry of Health – Israel
MOP/DGA	Ministerio de Obras Públicas/Dirección General de Aguas (Ministry of Public Works/General Water Authority) – Chile
MOP/DOH	Ministerio de Obras Públicas/Dirección de Obras Hidráulicas (Ministry of Public Works/Directorate General for Hydraulic Works) – Chile
MOPAS	Ministry of Public Administration and Security – Korea
MRDF	Ministry for Rural Development and Food – Greece
MSANTE	Ministère de la Santé (Ministry of Health) – France
MSPS	Ministerio de Sanidad y Política Social (Ministry of Health and Social Policy) – Spain
Mtransport	Ministry of Transport, Public Works and Water Management – Netherlands
NACCW	Natural England and the Countryside Council for Wales – UK
NARS	Acting Regulatory Unit for non-energy, non-telecom public utilities – Italy
NFU	National Farmers Union – UK
NGO	Non-governmental organisation – n/a
NWC	National Water Commission – Australia
NWQMS	National Water Quality Management Strategy – New Zealand
NZStats	New Zealand Statistics – New Zealand
OC	Organismos de Cuenca (River Basin Organisations) – Spain
ODA	Official Development Assistance – n/a

OFWAT	Office of Water Services – UK
ONEMA	Office national de l'eau et des milieux aquatiques (National Water Office and Aquatic Environments) – France
PAPR-DOH	Programa de Agua Potable Rural, Dirección de Obras Hidráulicas, Ministerio de Obras Públicas (Rural drinking water programme, Directorate General for Hydraulic Works, Ministry of Public Works) – Chile
PCE	Parliamentary Commission for the Environment – New Zealand
PLU	Plans locaux d'urbanisme (Local Urban Planning) – France
PRODDER	Programa de Devolución de Derechos (Duty Drawback Programme) – Mexico
PROFEPA	Procuraduría Federal de Protección al Ambiente (Federal Office for the Protection of the Environment) – Mexico
PROMAGUA	Programa para la Modernización de Organismos Operadores de Agua (Programme for the Modernisation of Water Companies) – Mexico
RA	Regional Authorities – Greece
RBM	River Basin Management – UK
RMCA	Regional Construction Management Administration – Korea
RWD	Regional Water Directorates of Greece – Greece
SACM	Sistema de Aguas de la Ciudad de México (Water Supply System for the City of Mexico) – Mexico
SAGARPA	Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación (Ministry of Agriculture, Livestock, Rural Development, Food and Fisheries) – Mexico
SBE	Department of Natural Resources, State Board of Examiners – USA
SCOT	Schémas de cohérence territoriale (Territorial Coherence Schemes) – France
SDAGE	Schéma directeur d'aménagement et de gestion des eaux (Water Management and Development Scheme) – France
SE	Secretaría de Economía (Ministry of Economy) – Mexico
SEDESOL	Secretaría de Desarrollo Social (Ministry for Social Development) – Mexico
SEMARNAT	Secretaría de Medio Ambiente y Recursos Naturales (Ministry of the Environment and Natural Resources) – Mexico
SENER	Secretaría de Energía (Ministry for Energy) – Mexico
SES	Socio-Ecological Systems – n/a
SFP	Secretaría de la Función Pública (Ministry of Public Administration) – Mexico
SHCP	Secretaría de Hacienda y Crédito Público (Ministry of Finance and Public Credit) – Mexico
SI	Secretariat of Inspectorate – Greece
SISS	Superintendencia de Servicios Sanitarios (Superintendence of Sanitary Services) – Chile
SNDE	Schéma national des données sur l'eau (National Statistics Scheme on Water) – France
SNV	Scheepvaart NV – Belgium
SOURCE	Water Resources Prospective and Management Scheme – France
SPGE	Société publique de gestion de l'eau (Public Company for water management) – Belgium
SPW	Service public de Wallonie (Public Service of Wallonia) – Belgium
SS	Secretaría de Salud (Ministry of Health) – Mexico
SSW	Special Secretariat for Water – Greece

STR	State Territorial Representatives – n/a
SVW	Samenwerking Vlaams Water (Flemish Water Association) – Belgium
SWDE	Société wallonne des eaux (Water Wallonia Company) – Belgium
TAG	Technical Advisory Group – UK
UKIA	United Kingdom Irrigation Association – UK
VLAREM	Vlaams Reglement betreffende de Milieuvergunning (Belgian environmental regulation) – Belgium
VMM	Flemish Environment Agency – Belgium
W&Z	Waterways and Sea Channel NV – Belgium
WAC	Water Authority Council – Israel
WAG	Welsh Assembly Government – UK
WFD	Water Framework Directive – n/a
WIS	Water Information Systems – n/a
WQCC	Department of Public Health, Water Quality Control Commission – USA
WQCD	Department of Public Health, Water Quality Control Division – USA
WSP	Water Service Providers (usually local councils) – New Zealand
WUA	Water User's Association – n/a
WWFOCB	Water and Wastewater Facility Operators Certification Boards – USA
WWSP	Waste Water Service Providers (usually local councils) – New Zealand

Executive Summary

The “water crisis” is largely a governance crisis

It is now widely acknowledged that there is enough water on Earth for all, even in areas where temporary shortages may exist. Clearly, the current water “crisis” is not a crisis of scarcity but a crisis of mismanagement, with strong public governance features. Key obstacles to improve water management are institutional fragmentation and badly managed multi-level governance, in a context where local authorities are most often in charge of water resources management and service delivery.

Water policy involves a range of public stakeholders across ministries, departments and public agencies, and between various levels of government. In addition to the policy makers, citizens, private actors, end users, investment banks, and infrastructure and service providers have a stake in the outcome. The water sector is also affected by numerous external drivers. The water cycle is inherently complex, and generates important externalities in many domains that are critical for development, including health, poverty alleviation, agriculture and energy. Inherently, water policy therefore induces a high degree of complexity, given the multiplicity of actors, motivations and stakes. This raises crucial considerations for effective governance.

Indeed, whether in developed or developing countries, and whether water is scarce or plentiful, *water governance* remains in a state of confusion. Across a diversity of contexts, common challenges occur. They include fragmented institutional structures, limited capacity at the local level, unclear allocation of roles and responsibilities and questionable resource allocation. Patchy financial management and the lack of long-term strategic planning are also to blame, together with poor economic regulation and poorly drafted legislation. Insufficient means for measuring performance have contributed to weak accountability and transparency. These obstacles, across boundaries and within countries, are more or less acute, but are often rooted in misaligned objectives and poor management of interactions between stakeholders.

Improving water governance is a key topic in the political agenda worldwide. It is a prerequisite for sustainable and innovative water policies that can “do better with less” and involve all relevant actors to achieve the Millennium Development Goals. Effective public governance is critical for regulation and for the mix of economic instruments (including pricing, subsidies, or compensation mechanisms) that offer incentives to different groups of users to engage in water-sustainable practices. It is also crucial to reconcile the long-term financial needs of the sector with the revenue streams available (3Ts – taxes, transfers and tariffs), taking into account the need for efficiency of fund use and the importance of strategic financial planning. Finally, integrated public governance is

also an opportunity to overcome the typical disjuncture between water policies and planning on the one hand, and engineering and infrastructure investments on the other, both of which affect water quantity and quality.

To clarify the “black box” that governs water, ways of designing and implementing water policy must be addressed, including setting priorities and formulating strategies to solve the problems that have been identified. Co-ordination and consultation mechanisms must be devised to overcome the barriers to effective implementation on the ground. In particular, adopting a “systemic” approach to water policy requires overcoming critical multi-level governance challenges. This implies managing the explicit or implicit sharing of policy-making authority, responsibility, development and implementation at different administrative and territorial levels, meaning: i) across different ministries and/or public agencies at central government level (upper horizontally); ii) between different layers of government at local, regional, provincial/state, national and supranational levels (vertically); and iii) across different actors at the sub-national level (lower horizontally).

Difficulties in implementation are an obstacle to water reforms

Well-managed water systems are a fundamental policy goal for all countries and can be an important driver for economic development and welfare. Yet significant “gaps” persist. Identifying appropriate policies and approaches for integrative water policy is only a first step: implementation is essential. Making reform happen in the water sector requires ensuring that the actions of all stakeholders contribute to the long-term objectives of environmental sustainability and enhancing social welfare. Learning from the experience of past and ongoing water reforms can help throw light on the process and increase the chances that future water reforms will succeed.

In the past four years, the OECD has accumulated data and analytical work on water policy in a series of OECD and non-OECD member states. The *Managing Water for All* report (OECD, 2009a) provides policy recommendations on the economic and financial aspects of water resources management and water service provision. It studies underlying investment needs, and analyses the economic, social and environmental benefits of integrated water policies and improved regulatory oversight. The report considers both developing and developed countries, addresses the problems of distribution and competitiveness, and offers concrete guidance and a Checklist for public action. In particular, it emphasises the need for mutually supportive policies, as well as the necessary understanding of the exercise of political, economic and administrative authority for effective and integrated water policy.

Building on existing OECD work on water, the present report further explores the obstacles to effective water policy, particularly with respect to the challenges presented by multi-level governance. Multi-level governance of water policy is a source of major difficulties in water policy design and implementation and the question of *how* appropriate policies and approaches can be implemented is of paramount interest.

*Better management of multi-level governance
can help address complexity in the water sector*

The report argues that in most countries, regardless of the level of decentralisation, water public governance is fragmented and would benefit – from an economic and environmental point of view – from a stronger rationale for efforts to co-ordinate water policy. Given the importance of local actors, stakes and specificity in the water sector, policy makers should not avoid complexity by favouring traditional top-down policies but instead, find ways to maintain coherence while preserving diversity, so as to reflect the heterogeneous concerns of stakeholders on the ground. A multi-level approach integrating international, national and local actors can help diagnose inherent governance challenges in water policy making and formulate possible policy responses.

Understanding of the processes that result in improvements or deterioration of water governance is limited at present because scientific disciplines use different concepts and terms to describe and explain complex socio-ecological systems (SESs). Without a common framework to organise findings, knowledge cannot accumulate. The objective of this report is therefore to provide a “reading template” to: i) map the allocation of responsibilities in water policy design, regulation and implementation; ii) identify common multi-level governance bottlenecks for integrated water policy; iii) recommend the main policy responses for managing mutual dependencies across levels of government in water policy design and implementation; iv) promote decision-making that integrates actors at international, national, local, basin and sub-basin levels; and v) encourage the adoption of relevant capacity-building, monitoring and evaluation tools.

The multi-level approach used in this analysis aims to identify good practices for managing interdependencies between the many stakeholders involved in water management. It takes a close look at the processes through which public actors articulate their concerns, decisions are taken and policy makers are held accountable. It considers water governance as the political, institutional and administrative framework for Integrated Water Resources Management (IWRM). Both high-level decision making and actions taken at local and regional levels are studied, including the ability to: i) *design* public policies whose goal is the sustainable development and use of water resources, and to mobilise the social resources to support them; and ii) ensure that the different actors involved in the process *implement* them successfully.

The report focuses on obstacles to co-ordination as well as the instruments available to public actors (as water policies are mostly managed by public entities) as a means to encourage effective multi-level governance and integrated implementation of water policy. It deals principally with public governance issues, and only to a lesser extent on how private citizens and civil society can be enlisted to address these challenges. Landowners, private and community-based actors, all of whom play an important role in water management planning, practices and processes, are not covered as such in the analysis, except through their interaction as end users, clients or co-designers with policy makers.

Data collection was based on responses to a Survey on Water Governance, in an attempt to gather a new baseline of institutional information for the water sector. A 20-page questionnaire available in five languages (www.oecd.org/gov/water) was sent to OECD countries' policy makers from central and sub-national administrations, regulators and river basin organisations. Half (17) of the OECD countries participated in the survey (see list

and details of respondents in Annex 5.A1), thus providing qualitative and quantitative information based on perception indicators on their respective governance challenges and instruments. This allowed for creating a platform for comparison across the OECD region, given the diversity of institutional settings and the differing degrees of decentralisation in water policy they present, sensitivity to water scarcity, ongoing policy reforms and consensus on the need to improve water policy.

Key messages from the report

The main findings of the report are fourfold (see Chapter 5).

The institutional organisation of the water sector varies widely across and within OECD countries

An analysis of the allocation of roles and responsibilities in water policy in 17 OECD countries has resulted in a matrix that permits “institutional mapping” of water policy (Chapter 2). Country profiles were designed (see Annex 5.A1) to identify *who* does *what* in water policy making (design, regulation, implementation) at the central and sub-national levels, and different general categories of institutional organisation in water policy have been distinguished. Several conclusions can be drawn from the results:

- First, it is not possible to identify a master plan generally adopted for assigning competencies across ministries and levels of government in the water sector. However, common trends across OECD countries are noticeable, especially regarding sub-national actors and their responsibilities as most OECD countries have largely decentralised their water policy making.
- Second, no systematic correlation can be found between a given country’s institutional organisation (unitary or federal, for example) and the institutional mapping of water policy. Geographical, environmental and economic factors also have a considerable impact.
- Third, river basin management has been encouraged in both federal and unitary countries, thanks to institutional factors but also to hydrological parameters and international incentives or regulations.
- Fourth, based on comparing the allocation of responsibilities at the central and sub-national levels, the report presents a tentative typology of three categories with different governance challenges: i) implementing an integrated and place-based approach at the territorial level; ii) integrating the involvement of different actors at central and sub-national levels; and iii) integrating multisectoral and territorial specificities at the central level. Further research into the advantages and disadvantages of each category should be undertaken by in-depth studies at national or sub-national level.

Multi-level governance “gaps” in water policy design, regulation and implementation affect all OECD countries, but to varying degrees

The next objective of the report is to identify the principal co-ordination and capacity challenges across ministries and public agencies, between levels of government, and across local actors involved in water policy, based on the OECD *Multi-level Governance Framework* (Chapter 3). The degree to which effective co-ordination and implementation of

water policies is compromised by multi-level governance gaps varies widely in the OECD region, but common challenges have been identified:

- In two-thirds of OECD countries surveyed, the *funding (or fiscal) gap* (i.e. the mismatch between administrative responsibilities and available funding) is the main obstacle to vertical and horizontal co-ordination of water policies.
- Despite the well-developed infrastructure and the regular transfer of expertise, the *capacity gap* is still the second most important challenge in OECD countries – especially at the sub-national level.
- Two-thirds of OECD countries surveyed still face a *policy gap* (i.e. the sectoral fragmentation of water related tasks) because of the fragmentation of responsibilities at national and sub-national level and the lack of institutional incentives for horizontal co-ordination between different policy fields.
- The *administrative gap* (i.e. mismatch between hydrological and administrative boundaries) still has a significant impact on water policy implementation, even after the adoption of river basin management principles.
- Last but not least, *information and accountability gaps* are major obstacles to integrated water policy in half of the OECD countries surveyed.

Three aspects of institutional management have been recognised throughout the report. *First*, style of government, traditions and values influence the institutional organisation of the water sector together with economic, environmental and geographical factors. *Second*, divided jurisdiction, shared responsibility, overlaps and even duplication within organisations inevitably exist in all countries, given the intrinsic characteristics of the water sector, but to a greater or lesser degree. *Third*, a mix of strategies is called for to reduce the obstacles inhibiting integration. Recognising these realities is fundamental to any reform that aims to create favourable conditions for effective, fair and sustainable water management.

Most OECD countries have made significant efforts to co-ordinate water policy across ministries and between levels of government

A third contribution of the report is to identify existing governance instruments for building capacity and co-ordinating water policies at horizontal and vertical levels (Chapter 4). OECD experience shows that there is no panacea for integrating water policy, but that a wide variety of options exist:

- All OECD countries surveyed have set up co-ordination tools at the central government level. These mainly consist of line ministries, interministerial bodies or mechanisms, or specific co-ordinating bodies. Most countries have also made efforts to co-ordinate water with other policy areas, including spatial planning, regional development, agriculture and energy (OECD, 2011a).
- Where they exist, river basin organisations, performance measurements, water information systems and databases, financial transfers, intermunicipal collaboration, citizen participation and experimentation of water policies are important tools for co-ordinating water policy at the territorial level and between levels of government.

Fourth, the governance challenges and instruments identified in the report are interrelated, and since they are likely to interact with each other, they should be approached in a holistic way. In the absence of a “one size fits all” model, assessing how far

specific governance tools succeeded in bridging identified gaps is a difficult task, and calls for further information, analysis and case studies at different territorial (cross-border, national, urban, rural, basin, sub-basin) levels. The question of co-ordination is not merely an instrumental issue. The effectiveness of co-ordination and collaboration is also the result of many more general factors, such as the pre-existing degree of social capital, the general governance culture, interpersonal trust, etc. Incentives to foster collaboration need therefore to be incorporated within this wider framework, and have a good “fit” with local governance cultures and norms.

Guidelines can help manage complexity in water policy and maintain coherence while preserving diversity

As already noted in the OECD 1989 Council Recommendation on *Water Resource Management Policies: Integration, Demand Management and Groundwater Protection*, existing institutions, policies and management practices in each country reflect cultural and social systems. For orderly trade and internationally consistent allocation of resources, a certain uniformity in pricing policies, charging practices and environmental standards is desirable. But cultural traditions, and differences in the assimilative capacity of the environment, need to be taken into account in implementing the Recommendations.

The report ends with tentative guidelines (Chapter 5) intended to serve as a tool for policy makers to diagnose and overcome multi-level governance challenges in the design of water policy. Such guidelines are interdependent and should not be considered in isolation. However, they can help enhance the prospects for crafting successful water reform strategies in the future. They are intended as a step towards more comprehensive guidelines (to be developed at a later stage) based on in-depth policy dialogues on water reform with countries and recognised principles of water policy (e.g. “the polluter pays” principle), economic bases (e.g. sustainable cost recovery) and good governance practices.

Preliminary guidelines for integrated public governance of water policy:

1. Diagnose multi-level governance gaps in water policy making across ministries and public agencies, between levels of government and across sub-national actors. This will help clearly define roles and responsibilities of public authorities.
2. Involve sub-national governments in designing water policy, beyond their roles as “implementers”, and allocate human and financial resources in line with responsibilities of authorities.
3. Adopt horizontal governance tools to foster coherence across water-related policy areas and enhance inter-institutional co-operation across ministries and public agencies.
4. Create, update and harmonise water information systems and databases for sharing water policy needs at basin, country and international levels.
5. Encourage performance measurement to evaluate and monitor the outcomes of water policies at all levels of government, and provide incentives for capacity building.
6. Respond to the fragmentation of water policy at the sub-national level by encouraging co-ordination across sub-national actors.
7. Foster capacity-building at all levels of government. This implies combining investment in physical water and sanitation, or “hard” infrastructure, and providing “soft”

infrastructure, i.e. mainly the institutions upon which water outcomes rely and their ability to fulfil their duties in an effective and co-ordinated way.

8. Encourage a more open and inclusive approach to water policy making through public participation in water policy design and implementation.
9. Assess the adequacy of existing governance instruments for addressing identified challenges and fostering co-ordination of water policy at horizontal and vertical levels.

Chapter 1

Public Governance and Water Policies: An Innovative Multi-level Approach

This chapter explores how public governance contributes to effective design and implementation of water policies. It situates the scope of the research in the overall debates, concepts, definitions and ongoing initiatives on water governance and sums up the value added of the multi-level governance approach that structures the overall analysis. It i) provides a brief overview of water governance literature; ii) emphasises the rationale for a specific focus on multi-level governance issues, and iii) describes the hypotheses and methodological framework that structure the analytical work of the report.

Introduction

Clearly, the “water crisis” is a governance crisis, which features include amongst others territorial fragmentation, multiple and interdependent stakeholders across policy areas and levels of government, lack of capacity of sub-national governments, weak institutional, integrity and regulatory frameworks and patchy financial management. Better management of multi-level governance can help address complexity in the water sector and overcome barriers to implementation of water policy reforms. Understanding the contribution of better public governance to effective design and implementation of water policies is therefore crucial to identify inherent challenges and relevant policy responses. This chapter enshrines OECD multi-level governance perspective in broader definitions, literatures and initiatives on water governance, and describes the multi-level governance framework presented as a diagnostic tool for policy makers to anticipate common governance challenges in the water sector.

Improving water governance: A key topic in the political agenda

Water policies are affected by numerous external drivers, such as population growth, changes in consumption and production patterns, climate variability, lack of capacity, absence of effective financial support for funding new infrastructure and rehabilitating the infrastructure in place. The key concern is how water resources are managed worldwide rather than whether they are available or not, though scarcity is particularly acute in several countries and cannot be overlooked. The need for improving water governance is critical because of the many externalities of water on other policy areas such as health, agriculture, energy, the alleviation of poverty and public investment.

As was noted at the World Water Forum in Mexico in 2006 and in Istanbul in 2009, policy makers would do well to pay as much attention to the content of water policies as to the means of implementing them. Awareness is increasing of the need to deal with governance of water policy at the highest political level, and as a critical element of integrated water policy. Water governance, including a supportive legal and institutional framework is also seen to play a central role in achieving water security.

Improving public governance by creating supportive legal and institutional frameworks and better managing relations across levels of government is now considered a prerequisite for sustainable water policy and crucial to achieve water security, for several reasons:

- *Water demand is increasing* as rapid economic development puts pressure on water ecosystems and other natural resources. In many areas, demand is outstripping supply, and when limited water resources are over-extended, it becomes vital politically to improve water governance to prevent or reduce conflicts.
- *Access to water trumps the engineering view.* Disputes over water are often related more to the social, economic and institutional context than they are to the technical factors governing the availability of water resources. The involvement of stakeholders and institutions, as

well as their political priorities, interventions and practices have crucial influence on the design of infrastructure and the strategic and day-to-day management of water.

- *The lack of accountability and transparency* in water policy is a symptom of governance deficiencies both in the private and the public arenas. In many countries, enforcement of legislation is weak and judicial systems are inadequate. This is detrimental to sustainable water use and service provision in many ways. It reduces economic growth, undermines performance and effectiveness, discourages investments in the water sector and frustrates stakeholder participation in the decision-making process.
- *Water sector reforms*, to be effective, require improvements in water governance systems. In most OECD countries, decision-making power over water has been delegated to lower levels of government. Bottom-up, demand-driven approaches that combine the experience, knowledge and understanding of various local actors need an overall framework for managing mutual dependencies and creating synergy.
- *Ownership of water rights and associated roles and responsibilities* have a complex relationship with water governance, since they have an important influence on the organisation of the water sector and co-ordination between its agents.¹ How property rights are defined, who benefits from these rights and how they are enforced are central issues that often require clarification as patterns of supply and demand change. In addition, the introduction of water trading rights has brought a new economic dimension to the complexity of water governance and management.

The recent attention to water governance concerns follows a general shift in focus on the sector during the 1990s. The political agenda has gradually moved from “technical”, supply-driven, infrastructure-led solutions towards demand-based approaches emphasising the role of institutions and economic and social instruments. After the establishment of the “Dublin Principles” in 1992, which recognised water as an “economic good”, a global effort was mounted to promote a set of universal principles for good water management. This is enshrined in the concept of Integrated Water Resources Management (IWRM). Its intent is to promote the co-ordinated development and management of water, land and related resources, in order to maximise economic and social welfare equitably without compromising the sustainability of vital ecosystems. Integrated water management involves institutions and their efficacy (Kjaer, 2004). According to the Dublin Principles, since water sustains life, effective management of water resources demands a holistic approach, linking social and economic development and the protection of natural ecosystems. Effective management links land and water use across an entire catchment area or groundwater aquifer.

Better water governance is now recognised worldwide as a key condition for a fairer, cleaner and greener economy. In the context of the global water agenda, improvements in water policy are likely to be very limited, or at best slow and incremental, unless water institutions become more effective both independently and by interacting with each other. Innovative policy is called for, but institutional responses must also be designed, especially in the current context of financial constraints and climate change. Governments in countries where water is plentiful, as well as those where water is scarce, must now “do better with less and less resources”. The IWRM, adopted by 58 countries cannot be properly implemented without considering a broader governance framework. This would include not only sustainable water policies but also measures governing scientific, educational and technological issues, as well as communication and participation.

In practice, water policy reform is necessarily complex, and complex systems matter to policy makers. Social, political, ecological and economic systems involve mutually adaptive interactions and produce characteristic patterns, which policy makers need to anticipate if they are to make wise decisions. The water cycle is inherently complex, given that it is closely associated with quantitative and qualitative dynamics across spatial and temporal scales, and with natural and socioeconomic systems that are becoming increasingly unpredictable. Given this uncertainty, a balanced design for water governance is called for.

The difficulty of reforming the water sector has thrown into relief the weight of institutional, rather than merely regulatory, factors (Ménard et al., 2005). To complement this report's in-depth look at institutional obstacles and incentives for co-ordinated water policy, further research should study "micro-governance" to identify good local practices for managing Commons.

While the need for integrated water policy is widely acknowledged, it has not yet totally been achieved on the ground. In many countries, water governance is still in a state of confusion. In both developing and developed nations, water policy, to a greater or lesser degree, intrinsically raises governance challenges. These include fragmented institutional structures, a lack of clarity on roles and responsibilities and questionable resource allocation. Meanwhile, inadequate financial management, low capacity of the implementing organisations, and unpredictability in the investment climate for private sector actors are also typical. Moreover, accountability of politicians, policy makers and implementing agencies is often lacking, in situations where the regulatory environment can be unclear or non-existent. Many of these problems are rooted in a general lack of knowledge and awareness of rights and responsibilities, and are broadly related to poor governance.

Overview of water governance concepts, definitions and initiatives

The term *governance* is now used widely by governments, international organisations, private operators, civil society, donors and aid agencies, but it has been defined in different ways. It originally served to connect debates on politics and administration that equated governance with government, but the focus has subsequently been extended beyond government to encompass relationships between a range of state and non-state institutions (Kaufmann et al., 2006). *Public governance* now refers broadly to power and authority and to how a country manages its affairs, and is taken to encompass all the mechanisms, processes, relationships and institutions citizens and groups use to articulate their interests and to exercise their rights and obligations.

The terms are sometimes used interchangeably, but *water governance* should be distinguished from *water management*. Water governance formally refers to the set of administrative systems, with a core focus on formal institutions (laws, official policies) and informal institutions (power relations and practices) as well as organisational structures and their efficiency. Water management covers the operational activities for meeting specific targets, such as aligning water resources and water supply, consumption and recycling. Institutional and policy frameworks that foster transparency, accountability, and co-ordination are thus part of good *water governance*. Delivering water or installing improved water services are part of *water management*.

Despite the extensive literature on the topic, the consensus associates water governance with "doing things right" (see definitions from Box 1.1). This encompasses several

Box 1.1. Definitions of multi-level water governance

The Global Water Partnership (GWP) defines water governance as “the range of political, social, economic and administrative systems that are in place to develop and manage water resources, and the delivery of water services, at different levels of society”. Many other agencies have subsequently adopted the same definition, including the World Bank. GWP proposes two broad sets of principles that underpin effective water governance:

- First, that approaches be transparent, inclusive, equitable, coherent and integrative.
- And second, that performance/operations be accountable, efficient, responsive, and sustainable (Rogers and Hall, 2003).

For UNDP, water governance addresses:

- Principles such as equity and efficiency in water resource and services allocation and distribution, water administration based on catchments, the need for integrated water management approaches and the need to balance water use between socio-economic activities and ecosystems.
- The formulation, establishment and implementation of water policies, legislation and institutions.
- Clarification of the roles of government, civil society and the private sector and their responsibilities regarding ownership, management and administration of water resources and services.

Water governance is therefore the set of systems that control decision-making with regard to water resources development and management. It is therefore more about the way in which decisions are made (i.e. how, by whom and under what conditions) than about the decisions themselves (Moench et al., 2003). It covers the manner in which roles and responsibilities (design, regulation and implementation) are exercised in the management of water and broadly encompasses the formal and informal institutions by which authority is exercised.

The emphasis on the politics of water is reinforced by Stockholm International Water Institute (SIWI) which states that water governance “determines who gets what water, when and how” (Tropp, 2005).

OECD (2011a) defines multi-level governance as the explicit or implicit sharing of policy-making authority, responsibility, development and implementation at different administrative and territorial levels, i.e.: i) across different ministries and/or public agencies at central government level (upper horizontally); ii) between different layers of government at local, regional, provincial/state, national and supranational levels (vertically); and iii) across different actors at the sub-national level (lower horizontally).

dimensions, such as economic governance, corporate governance, international governance, regional governance, national governance and local governance (Dixit, 2009).

Most governance principles for managing water resources and services are based on common pillars. They have been variously combined in different frameworks, thus emphasising certain universal aspects of governance (Lockwood et al., 2008):

- legitimacy of the organisation’s authority to govern;
- transparency in the decision-making process;
- accountability of actors and their responsibilities, including integrity concerns;
- inclusiveness of the different stakeholders;

- fairness in the service delivery or allocation of uses;
- integration of water policy making at horizontal and vertical levels;
- capacity of organisations and individuals managing water;
- adaptability to a changing environment.

This report is intended to complement existing literature on water governance. It specifically addresses the issue of coherence and co-ordination of public action to achieve water policy outcomes, such as sustainability, efficiency, equity, rule of law, accountability and participation. It can therefore only provide a partial response to the ongoing water governance debates. These require a more holistic view of entities and stakeholders (including those that are private) in a context of complexity, uncertainty and emerging issues such as pollutants, water-related externalities, climate change, etc.

The report analyses the “black box” of water policy making to identify the institutional obstacles to effective, equitable and sustainable water policies and some policy responses through the multi-level governance approach. But there are many additional external forces outside the direct control of public agencies. Business and trade development outside state control, changing society values and appreciation of natural resources can each influence water governance systems, and these present both risks and opportunities.

Improving public governance of water policy: scope of the report and methodology

Several international organisations and academic institutions have launched water governance initiatives or programmes. Some aimed to rank countries according to their governance practices (for example, the Asia Water Governance Index, see Box 1.2). Others, for example, development banks, were interested in backing up investment projects; in supporting specific action, such as technical assistance (e.g. UNDP Water Governance Facility);² or guiding policy makers in the assessment of the “enabling environment” for private sector participation (OECD, 2009). Most of these initiatives called for further research on multi-level governance issues. This report offers an innovative tool that addresses such topics.

Box 1.2. The Asia Water Governance Index

In 2010, the National University of Singapore launched the “Asia Water Governance Index”, constructed by weighing and aggregating 20 components, including legal, policy and administrative dimensions in the water sector, based on preliminary hypotheses.

Launched by the Nobel Prize winner Elinor Ostrom, this index, based on a survey of 102 water experts from 20 countries/states in the Asia Pacific and using 20 governance indicators, scored from 0 to 100, with 100 representing “best practices” in water governance.

These indicators were established according to preselected criteria of “good governance”, for example, level of decentralisation and adoption of river basin management. The results rank Malaysia in first place for its water governance arrangements, followed by a first category of countries including, among others, Australia and Japan; a second “intermediate” category, including China and New Zealand; and a final category of “least-performing governance practices”, including India, Pakistan and Uzbekistan.

Source: [www.spp.nus.edu.sg/docs/AWGI%20brochure-IWP-LKYSP\(9-10\).pdf](http://www.spp.nus.edu.sg/docs/AWGI%20brochure-IWP-LKYSP(9-10).pdf).

Because institutional arrangements are enshrined in national heritage, history and values, and because water governance is *de facto* based on this institutional background, there is no “optimal” level of water governance. Institutional inertia, a particularly important factor in this field of governance, makes water policy reforms extremely difficult to implement (OECD, 2010a). Hence the need for place-based policies integrating the specificity and institutional setting of the individual country or region. However, this report makes the assumption that water governance can be improved by more creative integration of territorial specificities and better co-ordination between the *public* actors in charge of designing, regulating and implementing water policies. It aims to provide policy makers with a platform of comparisons of best practices, based on the available data assessing capacity and co-ordination challenges in water policy across and between levels of government.

Decentralisation of water policies in the past decades has resulted in a dynamic relationship between public actors at all levels of government. To varying degrees, OECD countries have allocated increasingly complex and resource-intensive competences to lower levels of government. Despite these greater responsibilities, sub-national actors do not always have the authority over the financial allocation required to meet these needs, or the capacity to generate local public revenues. Meanwhile, the central government may not find it easy to promote and assess water resources and service strategies without obtaining information from sub-national governments and building, developing and reinforcing capacity at local level. Water governance is inextricably linked with territorial considerations, and increasing environmental constraints on water policy, and linkages and impacts of water on other policy areas (*e.g.* agriculture, energy, spatial planning, etc.) have made it increasingly difficult to execute comprehensive water policies. Governments are actively looking for ways to facilitate relationships among levels of government. But before any concrete action can be taken, there is a need to identify the main problems of co-ordinating policies between levels of government and building capacity at the sub-national level. The *OECD Multi-level Governance Framework* (Charbit, 2011) can be a powerful diagnostic tool in this regard.

The report offers a tool to identify the main multi-level governance challenges in the water sector and the policy instruments that government use to overcome them. The *OECD Multi-level Governance Framework* is organised around seven “gaps” and has been tested in other areas of public policy, such as regional development in the framework of territorial, metropolitan and rural reviews,³ as well as in other fields such as innovation (OECD, 2011b) public investment (OECD, 2011a). In-depth studies on selected governance mechanisms (such as fiscal relations across levels of government (OECD, 2010b), contractual arrangements and performance indicators) have also been undertaken (OECD, 2007; OECD, 2009). The analytical framework is therefore not specific only to the water sector, though it was largely adapted to embrace its intrinsic characteristics and proved highly relevant in the case of water, because this sector combines all the gaps. Further research is now under consideration at the OECD to apply the *Multi-level Governance Framework* to other decentralised public policy domains that depend on mutual dependencies between public actors, such as health and education.

An *administrative gap* occurs when there is a geographical mismatch between hydrological and administrative boundaries. In sectors like health and education, administrative gaps do not present a major obstacle, because the logic of service provision is not constrained by nature. In the water sector, however, the administrative boundaries of municipalities, regions and states rarely correspond to hydrological imperatives. This

Table 1.1. **The OECD Multi-level Governance Framework:
Key implementation gaps in water policy**

Administrative gap	Geographical “mismatch” between hydrological and administrative boundaries. This can be at the origin of resource and supply gaps. => Need for instruments to reach effective size and appropriate scale.
Information gap	Asymmetries of information (quantity, quality, type) between different stakeholders involved in water policy, either voluntary or not. => Need for instruments for revealing and sharing information.
Policy gap	Sectoral fragmentation of water-related tasks across ministries and agencies. => Need for mechanisms to create multidimensional/systemic approaches, and to exercise political leadership and commitment.
Capacity gap	Insufficient scientific, technical, infrastructural capacity of local actors to design and implement water policies (size and quality of infrastructure, etc.) as well as relevant strategies. => Need for instruments to build local capacity.
Funding gap	Unstable or insufficient revenues undermining effective implementation of water responsibilities at sub-national level, cross-sectoral policies, and investments requested. => Need for shared financing mechanisms.
Objective gap	Different rationales creating obstacles for adopting convergent targets, especially in case of motivational gap (referring to the problems reducing the political will to engage substantially in organising the water sector). => Need for instruments to align objectives.
Accountability gap	Difficulty ensuring the transparency of practices across the different constituencies, mainly due to insufficient users’ commitment’ lack of concern, awareness and participation. => Need for institutional quality instruments. => Need for instruments to strengthen the integrity framework at the local level. => Need for instruments to enhance citizen involvement.

Source: Adapted from OECD methodology presented in Charbit (2011) and Charbit and Michalun (2009).

results in a mismatch at sub-national level that often obstructs water policies and complicates the relationships between elected representatives, local authorities, water agencies, resource managers and end users (Moss, 2007). Historically, water bodies have been organised along administrative boundaries, although river catchments rarely obey administrative logic. Management failures, such as a lack of co-operation, participation and transparency, are often rooted in this mismatch. For example, it is difficult to enforce water quality regulations and water abstraction rules where two or more water management bodies are in charge of different sections of one river. The *administrative gap* may raise the question of the “appropriate” scale for investments, which can be achieved through better co-ordination of water policy. The fact that water does not respect urban administrative borders is a problem that integrated metropolitan water governance must respond to. Metropolitan areas, with their overlapping jurisdictions and political fragmentation, can lead to incoherent and, at worst, mutually contradictory water management practices. Water conflicts between municipalities within one metropolitan area are increasingly common, and tools are needed to assist in confronting water scarcity, climate change, and competing uses between cities in one metropolitan area.

The *policy gap* refers to the sectoral fragmentation of water-related tasks across ministries and public agencies. Silo approaches in water policy result in incoherence between sub-national policy needs and national policy initiatives and reduce the possibility of success for implementation of cross-sectoral policy at the sub-national level. If individual ministries or public agencies operate independently, rather than undertaking cross-sectoral initiatives, the opportunity for “whole government” approaches is minimised. At the same time, possibilities for maximising efficiency and effectiveness in cross-sectoral public services may be lost, and sub-national development adversely impacted. Policy initiatives

designed at the central level and implemented at the sub-national level are symbolic of the co-ordination needed between ministries to reduce the impact of sectoral fragmentation on sub-national actors. The *policy gap* therefore refers to a lack of policy coherence at central government level, which is a condition for better cross-sector co-ordination at the sub-national level.

An *information gap* occurs when there is an asymmetry of information across ministries, between levels of government and across local actors involved in water policy. A primary concern is the lack of information to guide decision makers in the water sector. In recent years, the rapid development in water policy reforms was difficult to put into practice because little data and information was available, particularly on the economic and institutional implications. In many countries, this was exacerbated by the lack of capacity, resources and expertise to collect, analyse and interpret water data. Even when the information is available, it must be shared at all levels of government to capitalise on individual knowledge centres, thereby creating a stronger whole. An asymmetry of information may occur when national and sub-national authorities do not actively share their knowledge of what is happening on the ground and can create win-lose situations by specific use of information not in the possession of the other party.⁴ In practice, sub-national governments will tend to have more information about local needs and preferences, and also about the implementation and costs of local policies. Unless they generate and publish reliable data on a timely basis and communicate it to the central level, an *information gap* is created. Nevertheless, the sub-national level views are only “partial” – limited to a specific area or territory. Thus the central government plays an indispensable role in managing the information so as to support a broader vision of public policy objectives. Information can also be used to identify capacity deficiencies so they can be corrected. Once again, this indicates a relationship of mutual dependence. The relevant information does not lie exclusively with one level of government, and actors depend on each other’s knowledge to disseminate information to and from the relevant levels of government.

A *capacity gap* is generated by insufficient scientific and technical expertise and infrastructure for designing and implementing water policies. If there is a difference between the capacity needed to shoulder water responsibilities, and the local authority’s organisational, technical, procedural, networking and infrastructure capacity, consequences for the implementation of national water policies are unavoidable. The local authority may not have the funding to operate and maintain services effectively. This may lead to the deterioration and potential failure of services and infrastructure, which in turn threaten the quality of water resources. Many countries willing to decentralise their water policy face a fundamental sequencing question: at what point is the sub-national level ready or sufficiently mature to assume responsibilities associated with devolved or decentralised tasks in water policy making? Will learning by doing be sufficient, or is it essential to build capacity before it is possible to properly deliver on assigned competences? There is no right or wrong answer to these questions. Capacity development needs vary with the pre-existing levels of administrative infrastructure. Established sub-national governments with well-developed institutions may need little capacity-building when faced with new responsibilities. But where sub-national governments or related institutions must be created or have historically had a limited role, the difficulties will be greater. This capacity gap is not restricted to the sub-national level. It also applies to the national level in terms of managing multi-level relations, allocating responsibilities and funds, and ensuring co-ordinated, coherent policy approaches among actors at central

level. In some instances, the sub-national level experiments with innovative approaches in water policies, and they are subsequently “learned” and capacity built by peer levels or transferred from the sub-national level to the central level.

The *funding (or fiscal) gap* refers to insufficient or unstable revenues to implement water policies across ministries and levels of government. It is represented by the difference between sub-national revenues and the expenditures sub-national authorities require to meet their responsibilities in the water sector. This gap reflects a mutual dependence between levels of government. Sub-national authorities often depend on higher levels of government for funding water policies, while central government depends on the sub-national authorities to deliver them and meet both national and sub-national policy priorities. This interdependence is all the more crucial when government funding has been slashed in times of economic and financial crisis. The cost of construction and maintenance of water and sanitation infrastructure is constantly increasing and requires long-term investment. Private partners, investment banks and innovative arrangements at local level have thus been explored as complements to public action in water financing.

The *objective gap* occurs when diverging or contradictory objectives between levels of government or ministries compromise long-term targets for integrated water policy. Frequently, when priorities are not clearly formulated at the highest political level, conflicting interests in water uses, quality, energy efficiency and pricing policy prevent consensus on aligned targets. For example, at sub-national level, urban flood controls and ecological preservation or restoration of urban waters often conflict. In the past, exclusive emphasis on structural methods of flood control led to destruction of habitat as well as deterioration of water quality. When the objectives of flood control, ecological preservation and spatial planning converge, the impact on other policy areas can be minimised. Overall, the *objective gap* underlines governments’ challenges in fostering strategic and territorialised planning of water policy. All relevant stakeholders must be engaged for the long haul, beyond political changes and electoral calendars. The timeframe for decisions is of crucial importance in strategic planning. Water policies are frequently long-term endeavours that involve planning, ex-ante evaluation, consultation, several stages of implementation and ex post evaluation. Short-term considerations and vested interests can result in action that is potentially counterproductive. The prospects of success are greater when the timeframe for one policy aligns with activities in another policy. In theory, time scales are relatively easy to co-ordinate. For instance, regulatory and budget cycles can be synchronised over time (e.g. multi-annual budgeting) so that decisions that require coherence can be taken independently of political calendars and agendas, which vary from one ministry to another. In addition, strategic planning is more difficult to design if policies, legislation and institutions on the water environment are questioned from one government to another. It essentially requires a public relations effort to manage the expectations of those who have a vested interest in previous policies, so that they can be engaged in policy changes and build flexibility towards policy coherence at the central and local level.

The *accountability gap* refers to a lack of transparency in water policy making, and institutional issues of quality and integrity. Ensuring transparency across different constituencies is key for the effective implementation of water policies. But often, shortening the decision-making process introduces risks of transparency, integrity, capture and corruption, in particular when local governments do not have the capacity to monitor investment and civil society is not totally engaged. In addition, recent decades have seen a decrease in government provision of public goods and an increase in private sector

participation in the water sector, which has changed traditional government accountability. In this context, the *accountability gap* can be reflected in the market entry process, award criteria, as well as contract provisions for unforeseen contingencies. The question here for governments is not whether citizen awareness must be developed but whether mobilising public interest could lead to more effective water policies.

Conclusion

Diagnosing all the co-ordination gaps represents one of the primary challenges in multi-level governance of water policy. OECD countries may experience each gap to a greater or lesser degree, but given the mutual dependence that arises from decentralised contexts and the network-like dynamic of multi-level governance relations, countries are likely to face them simultaneously. Chapter 3 of the report provides evidence on OECD countries' main co-ordination and capacity challenges across levels of government in the design and implementation stages of water policy.

Notes

1. Water rights issues are not covered in this document, but should be considered in future developments on multi-level water governance.
2. www.watergovernance.org.
3. See list of OECD Territorial and Innovation Reviews at www.oecd.org/document/0/0,3746,en_2649_34413_19214656_1_1_1_1,00.html.
4. For further discussion of this aspect, see OECD 2007, *Linking Regions and Central Governments: Contracts for Regional Development*, OECD Publishing, Paris.

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Chapter 2

Mapping Institutional Roles and Responsibilities

This chapter aims to identify who does what in terms of water policy design, regulation, budget and implementation as well as the modalities for allocating roles and responsibilities in the water sector. It offers a tentative taxonomy of OECD countries based on the institutional organisation of the water sector, and identifies key features and trends within the OECD region in terms of allocating roles and responsibilities. Information was collected from responses to the 2010 OECD Survey on Water Governance, regarding the ministries, public agencies, levels of government and sub-national actors involved in specific areas and functions of water policy making. Detailed institutional mappings of 17 OECD countries are attached to the present report within country profiles available in the annex.¹

Introduction

Unclear, overlapping and fragmented roles and responsibilities across policy areas and between levels of government are often considered as the major obstacle to effective design and implementation of water policies. The water sector is affected by numerous external drivers and generates important externalities in various policy domains, hence the multiplicity of actors mutually dependent and the inherent risks of confusion, efficiency costs and conflicts in both water resources management and water services delivery. In this context, it is crucial to understand clearly *who* is responsible for *what* in terms of strategic planning, priority setting, allocation of uses, economic and environmental regulation, information, monitoring, evaluation, at *which* level of government (national, regional, local) and *how* such responsibilities are defined (by a specific law on water, by the Constitution, etc.).

OECD survey on water governance

To respond to this need, an extensive survey on water governance was undertaken in 2010 in order to map the allocation of roles and responsibilities across ministries and levels of government in 17 OECD countries.

Box 2.1. Methodological note on the water governance survey

17 OECD member countries participated in the 2010 Survey on Water Governance. In all, 23 questionnaires (were processed for the following respondents (see list in Annex 5.A1): Australia, Belgium, Canada, Chile, France, Greece, Israel, Italy, Japan, Korea, Mexico, Netherlands, New Zealand, Portugal, Spain, UK, and Colorado, US. Actually, in some countries (Belgium, France, Italy, New Zealand, Portugal) more than one questionnaire was collected because in general, the Secretariat targeted both central administrations and a sub-national authority (*e.g.* river basin authority, inter-municipality, metropolitan region, etc.). This could sometimes enrich the analysis, by making possible comparisons within the same country and highlighting aspects of policy making, such as an asymmetry of information between central and sub-national actors, or between actors involved at the level of policy design and those involved in implementation. But on the other hand, a different kind of challenge arises when the answers returned are different or incompatible. In such cases, the response from the central authority was chosen.

This sample of OECD countries includes a diverse group from different continents, with varied levels of income, environmental and institutional features, as well as approaches to water policy. It permits comparisons between areas where water is scarce and plentiful, and water policy is decentralised *versus* centralised. For instance, water policy in Belgium (water-rich) is exclusively designed and implemented by the regions, and the central government plays no role at all. An opposite case is that of Israel (water-scarce), where water policy is highly centralised. Cross-country comparisons should take these factors into account.

Box 2.1. Methodological note on the water governance survey (cont.)

The ease of performing comparisons within regions depends on the number of valid answers and questionnaires available. Some of the questionnaires were less helpful than others because a higher number of questions were left unanswered. Certain types of comparisons should be subject to particular caution, due to institutional features and the division of responsibilities and also because most quantitative data rely on *perception* indicators based on subjective judgments on a “1-to-3” scale (not important, important, very important).

This chapter summarises the main findings from the institutional mapping (see Annex 5.A1) of a hyper-fragmented and heavily regulated sector and emphasises the diversity of situations across the OECD region. It provides tentative categories of countries, based on the institutional organisation of their water sector and related governance challenges.

Box 2.2. Areas and functions of the institutional mapping**Areas of water policy covered by the institutional mapping:**

- Water resources management.
- Water supply (domestic, agriculture, industrial uses).
- Wastewater treatment.

Roles and functions targeted in the institutional mapping:**Policy design and implementation**

- Strategy, priority setting and planning (including infrastructure).
- Policy making and implementation.
- Information, monitoring and evaluation.
- Stakeholders' engagement (creating citizen awareness, etc.).
- Implementation of central government policies at the territorial level.

Regulation

- Allocation of uses.
- Quality standards.
- Compliance of service delivery commitment.
- Economic regulation (tariffs, etc.).
- Existence of a specific regulatory agency in the water sector.
- Monitoring of regulatory enforcement at the sub-national level.

Source: OECD Survey on Water Governance (2010).

Institutional mapping of water roles and responsibilities at central government level

Water policy making at central level in OECD countries: A diversity of situations

Table 2.1. An overview of OECD countries' water policy at the central level

Country or region	Unitary, federal or quasi-federal country	Number of principal actors in design and implementation	Number of actors in regulation	Role of central government (dominant actor, joint role with local actors, none)	Means of defining roles	Specific water regulatory agency (yes/no)
Australia	Federal	4	4	Joint	Law	Yes
Belgium (Flanders)	Federal	7	–	None	Constitution Law Other	No
Belgium (Wallonia)	Federal	–	–	None	Constitution Law	No
Canada	Federal	9	3	Joint	Constitution Law	No
Chile	Unitary	15	10	Dominant	Law <i>Ad hoc</i> Other	No
France	Unitary	5	5	Joint	Law <i>Ad hoc</i> Other	No
Greece	Unitary	13	12	Dominant	Law	Yes
Israel	Unitary	4	4	Dominant	Law Other	
Italy	Quasi- federal	6	5	Joint	Law <i>Ad hoc</i>	Yes
Japan	Unitary	4	–	Dominant	Law	No
Korea	Unitary	6	4	Dominant	Law	No
Mexico	Federal	6	4	Dominant	Constitution Law <i>Ad hoc</i>	Yes
Netherlands	Unitary	2	2	Joint	Constitution Law	Yes
New Zealand	Unitary	14	7	Joint	Law <i>Ad hoc</i> Other	Yes
Portugal	Unitary	3	5	Dominant	Law <i>Ad hoc</i> Other	Yes
Spain	Quasi- federal	5	6	Joint	Constitution Law <i>Ad hoc</i> Other	No
United Kingdom	Unitary	11	5	Joint	Law	Yes
United States (Colorado)	Federal	11	7	Joint	Constitution Law	No

Note: By "Actor" we mean central government authorities (public agencies, ministries, departments etc.).

Source: OECD Survey on Water Governance (2010).

Observations from water policy design, implementation and regulation features at national level

A hyper-fragmented sector

In some OECD countries, the allocation of roles and responsibilities in water policy making is so widely distributed across national and sub-national levels that it is impossible to capture a "national model" with comprehensive institutional mapping. Doing so would involve making a lot of generalisations that would obscure the diversity, fragmentation and omissions in the systems, or listing dozens of exceptions and caveats that would probably result in more confusion than clarity.² It is precisely this over-segmentation of the water sector and the lack of traditional co-ordination mechanisms that justified the need for further work in the framework of this report. The most egregious example of hyper-fragmentation of water policy is the United States (see Box 2.3).

In all OECD countries surveyed, the central government plays a certain role in water policy making. In some countries (France, Spain) the intervention of ministries and public agencies is focused on strategic planning and priority-setting, as well as policy making and implementation, while in others (Canada, United States, United Kingdom), it is more oriented towards environmental regulation. Naturally, the role of central government in water policy is less important in federal countries that have either devoted most of the responsibilities to sub-national governments or totally decentralised their water policy making, as in the case of Belgium. There, competences in water policy are exclusively

Box 2.3. Mapping roles and responsibilities in water policy: The challenging case of the United States

In the United States, through multi-level governance, local, state, and federal agencies develop and implement environmental policies and management plans in accordance with the elected officials' and voters' intrinsic valuation of their environment and considerations for economic development. Cities and counties generally control land use zoning restrictions. States control permits for withdrawing water from rivers and aquifers and establishing standards for the quality of wastewater returned to rivers and aquifers; and the federal government sets minimum standards for water quality of rivers and aquifers as well as drinking water, and also establishes protection for endangered species. The checks and balances inherent in these distributed roles ensure that no one constituency at the local, state or federal level is exclusively in control of implementation of water resources policy.

On most aspects of water supply planning and management, the United States has no central (national) policy. No one agency is granted sole responsibility or oversight, although at least 20 federal agencies have some role in the area. In addition, there are very few significant organisations at the river-basin scale, and the institutional mapping and governance challenges vary greatly from one state to another. In all, more than 50 000 agencies at federal, state, local and county levels are involved in water policy, making it difficult to achieve comprehensive mapping.

Some states (e.g. California) have adopted an institutional framework for state water planning and management, but in most others this is missing, with the void filled by around 16 000 municipal water agencies.

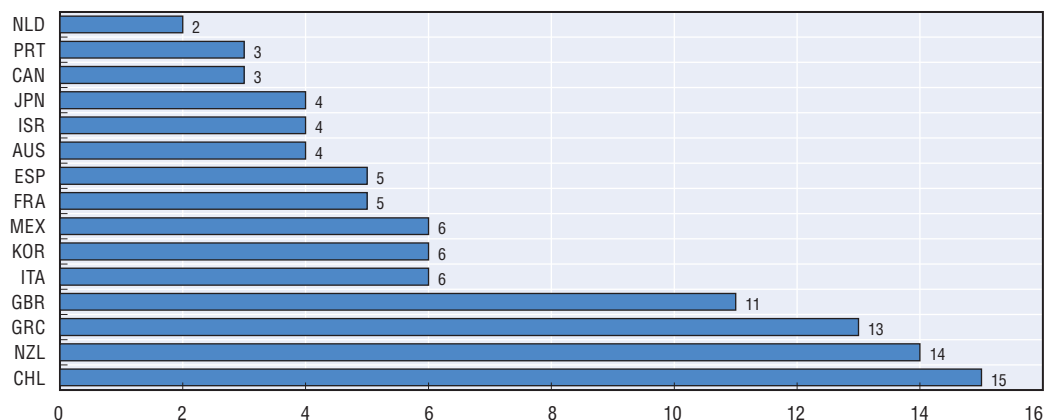
The state of Colorado falls somewhere near the middle of this continuum. In most states, water supply planning is conducted almost exclusively on a project-by-project basis, often at the municipal level, and often without direction from any federal or state-level policy framework. Even at the project scale, there are often no clear criteria or policies for selecting among options, and in some cases, no planning or reporting requirements of significance.

Compared to sectors such as energy or transportation, water supply planning and management is not merely decentralised but fragmented, incomplete and quite unsophisticated. One exception exists: water quality management. In this case, a well-established national policy, the Clean Water Act, obtains and a federal agency, the Environmental Protection Agency, is authorised to enforce the policy through a programme based on permits. The programme allows implementation to be conducted by state agencies that meet standards established by the EPA, which most states do. Additionally, there are also clear federal laws that deal with other environmental aspects of water management, such as the preservation of biodiversity, wetlands, rivers, etc.

devoted to the regional level, except for environmental duties linked to coastal and territorial waters (from lowest low-waterline) and product regulation (and authorisations to put products on the market), protection against ionising radiation, including radioactive waste, and the economic aspects of drinking water provision (i.e. the establishment of maximum prices and the approval of price increases).

In all OECD countries surveyed, multiple central authorities (ministries, departments, public agencies) are involved in water policy making and regulation at central government level. This is an interesting indicator for measuring the fragmentation of roles and responsibilities, based on the natural assumption that the more actors there are, the more complex the situation is. As Figure 2.1 shows, the number of central government actors

Figure 2.1. **Number of actors involved in water policy making at central government level**



Source: OECD Survey on Water Governance (2010).

involved in water policy making ranges from two in the case of the Netherlands to 15 for Chile. However, such indicators have limitations that also need to be taken into account. Indeed, the “apparent” number of actors may be biased by the “area of competence” of the ministries in charge. For instance, in the case of the Netherlands, the situation appears uncomplicated, since only two ministries cover water policy making. The Ministry of Transport, Public Works and Water Management is the line ministry, a ministry with specific responsibility for strategy, planning and priority setting for water resources. This includes irrigation water for agriculture, wastewater treatment, cooling water for industry and the water quality of the main water bodies. The Ministry of Housing, Spatial Planning and the Environment is the line ministry responsible for water services (i.e. water supply for households and industry) and sewage.³ A closer look at their prerogatives shows that such ministries embrace a wide diversity of areas, including transport, public works, water management, housing, spatial planning and the environment. This may in fact be equivalent to having six different ministerial departments or agencies, with a silo approach not only between but also within ministries if co-ordination tools are not set-up.

Even when there is a clear allocation of roles and responsibilities under a specific “water law”, co-ordination is still an imperative. Beyond the determination of *who* does *what*, the challenge lies in the problems of overlapping responsibilities generated by interpretation and implementation of water policy on the ground. In addition, both ministries are required to co-operate on some areas, given the interdependence of issues such as climate change, spatial planning, roles of water districts, agencies, organisations and the need to address issues of quantity and quality collectively.

The multiplicity of actors varies according to the area of water policy considered. On average, domestic water services usually involve the highest number of ministries, public agencies and departments, because of the externalities of water supply on other policy areas (e.g. education, health, etc.) while wastewater treatment usually involves the lowest number of central government authorities.

Mapping of the allocation of responsibilities provides the rationale for the adoption of governance tools to overcome the institutional complexity of water policy. However, it is worth keeping in mind when using the number of actors as an indicator of fragmentation that several examples exist of highly fragmented policy-making contexts (e.g. France,

Mexico and Canada) where the multiple actors and layers, usually perceived as obstacles to policy coherence, are compensated for by sound co-ordination mechanisms (see Chapter 4) that reduce the level of fragmentation.

Beyond “traditional” ministries, half of OECD countries surveyed reported the involvement of other types of actors at central government level in the design and implementation of water policy. A relevant example is Canada (see Box 2.4), where five departments (Environment Canada, Fisheries and Ocean Canada, Health Canada, Indian and Northern Affairs Canada, and Transport Canada) have regulatory responsibilities, and four additional departments also play a role in the water sector.

**Box 2.4. Multiple central agencies involved in water policy:
The Canadian example**

In Canada, several central departments are engaged in water issues, but the agencies listed below have been identified as the principal actors, with design, implementation and regulatory responsibilities.

1. *Environment Canada*’s mandate includes the preservation and enhancement of the quality of the natural environment, including water.
2. *Canada-United States International Joint Commission* oversees the conservation and protection of Canada’s water resources and enacts regulations governing boundary waters.
3. The mandate of *Agriculture and Agri-Food Canada* includes the provision of information, research and technology, policies and programmes for environmental protection, thanks to the development and promotion of agricultural best management practices, including water resources consumption. The *Department of Fisheries and Oceans* develops policies and programmes supporting Canada’s scientific, ecological, social and economic interests in oceans and fresh waters.
4. *Indian and Northern Affairs Canada* shares responsibility with Band Councils and Health Canada for providing water and wastewater services to First Nations, and is responsible for the management of water resources in Nunavut and the Northwest Territories.
5. *Health Canada* has expertise in developing the guidelines for Canadian drinking-water quality, and Guidelines for recreational and reclaimed water quality, in partnership with the provinces and territories. It also has a shared responsibility (with Band Councils and Indian and Northern Affairs) for providing water and wastewater services to First Nations.
6. *Infrastructure Canada* has the overall responsibility for delivering funds to support infrastructure initiatives, including, but not limited, to drinking water and wastewater projects.
7. *Natural Resources Canada* provides geoscience information for informed decision making on Canada’s offshore lands and groundwater resources.
8. *Transport Canada* promotes sustainable marine practices, oversees marine infrastructure and regulates the safe transportation of dangerous goods by water.

The *Department of Foreign Affairs and International Trade* is responsible for co-ordinating, developing and advancing Canada’s bilateral, regional and international positions on freshwater issues.

A heavily regulated sector

The water sector has many intrinsic characteristics which require sound regulatory frameworks: it consists mainly of natural monopolies, is territorially anchored at local level for service delivery and water resources management, requires large sunk infrastructure investments, entails high distribution and transportation costs, needs technology, know-how and expertise, has many externalities on different policy areas, etc. Because the water sector is rooted in the general interest and faces a low degree of competition (few international players and risks of abuse of dominant position), regulation is crucial to enable the public sector to carry out long term policy objectives, balance interest of all parties, prevent opportunistic behaviours, protect customers from private sector abuses and private sector from politically driven decisions,

All the OECD countries surveyed have adopted legislation on compulsory service delivery commitment, quality standards and regulation. In some cases, the regulations have even been designed across countries and basins. As an example, the governments of Australia and New Zealand have jointly developed the *National Water Quality Management Strategy* (NWQMS), the components of which may be incorporated into state and territory legislation, in varying degrees across jurisdictions. In Canada, inter-jurisdictional transboundary water governance mechanisms (such as the International Joint Commission, the Mackenzie River Basin Board and the Prairie Provinces Water Board) serve as collaborative forms to address issues of water quality and quantity.

Three categories of countries can be distinguished in terms of allocation of environmental and economic regulatory powers in the water sector at the national level. In a first category of countries, these functions are carried out by *ministerial departments* and/or public agencies; in a second category of countries, such duties rely on specific *regulatory agencies* in the water sector; and a third category of countries, in the middle of the continuum, significant regulatory powers are granted to specific actors at national level. OECD countries' institutional mapping shows that these different models have sometimes been combined within a same country, as environmental regulation is often carried out by ministerial departments or agencies, while economic regulation is undertaken either at the territorial level (states, provinces, municipalities) or by specific regulatory agencies.

Table 2.2. **Allocation of regulatory powers at the national level**

Where regulatory functions are mainly carried out	Examples
Ministerial department or public agency	Mexico (COFEPRIS), New Zealand (EPA), Israel (IWA)
Specific regulatory agency in the water sector	Chile (SISS), United Kingdom (economic regulation, OFWAT), Australia (ERA), Portugal (ERSAR)
National entity with specific regulatory powers	France (ONEMA), United States (EPA), United Kingdom (EA, DWI)

Source: OECD Survey on Water Governance (2010).

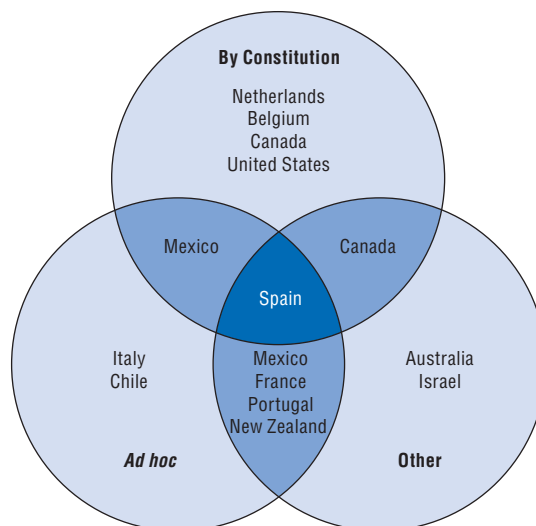
Examples of the first category include Mexico, New Zealand and Israel. In Mexico, most environmental regulatory powers are in the hands of the Federal Commission for Protection against Health Risks (*Comisión Federal para la Protección contra Riesgos Sanitarios*). In New Zealand, the *Ministry for Environment* has overall responsibility at a national level, with local/catchment responsibility devolved to local government (regional and unitary councils). In specific circumstances, water management decisions may be called back into central government's jurisdiction (administered by the Environmental Protection Authority). In

Israel, the Israeli Water Authority (IWA), a division of the Ministry of National Infrastructure, sets policies and manages, monitors and plans the national water supply and wastewater treatment. Other responsibilities include the allocation of potable *versus* recycled or sea water sources for each sector, proposing quotas, policies, regulations, and tariffs for each sector (domestic, agriculture, and industry), and enforcing all regulations, quotas and tariffs.

The second category includes countries that have set up specific regulatory agencies in the water sector, with varying degrees of political independence and financial autonomy. Usually, these cover infrastructure services, including water supply and sanitation, in order to better protect consumers and to improve efficiency. Regulatory agencies can be given a variety of responsibilities, including in particular the approval of tariff increases and the management of sector information systems, including benchmarking systems. They sometimes have a mandate to settle consumer complaints that have not been dealt with satisfactorily by service providers. These specialised entities are expected to be more competent and objective in regulating service providers than departments of government ministries. They are supposed to be autonomous and independent of the executive branch of government, but in many countries, they have not been able to exercise a great degree of autonomy. The most prominent OECD example of a regulatory agency in the water sector is the United Kingdom's Office of Water Services (OFWAT), whose purpose is to guarantee quality service at a fair price from the ten regional companies in charge of water and wastewater management in England and Wales, and to ensure their long-term viability. This must be balanced with its own objectives of protecting the interests of its customers, which implies keeping bills for consumers as low as possible, monitoring and comparing the services the companies provide, scrutinising the companies' costs and investment and encouraging competition where this benefits consumers. Necessary actions, including legal steps such as enforcement actions and fines, can be taken in case of non-compliance. The direct regulation of water companies in England and Wales is complemented by two other regulators, one responsible for environmental affairs and the other for drinking water quality, to protect public health.⁴ Another example is Portugal's national water and waste services regulation agency, ERSAR, created in 1997. Its responsibilities include the economic regulation of the water supply, sanitation and solid waste management, as well as national regulation of drinking water. In Chile, the powerful regulatory agency *Superintendencia de Servicios Sanitarios*,⁵ is in charge of setting water tariffs and sanitation services, granting concessions, monitoring quality of service delivery including sewage treatment, as well as establishing norms and standards.

The third category includes countries such as France, which has no entity for administrative regulation comparable to the OFWAT, but which grants significant regulatory powers to a national entity. Economic regulation is carried out through several complementary tools and actors. On the one hand, the national Parliament defines tariff-setting procedures and regulates revenues from water agencies; state territorial representatives in each department control *ex post* municipal regulations' conformity with national legislation, and the Regional Chambers of Audit control accounts related to water services. But on the other hand, the *Office National de l'Eau et des Milieux Aquatiques* (ONEMA),⁶ was created in 2007 and accountable to the Ministry of Ecology, Energy, Sustainable Development and Maritime Affairs. Its responsibilities include controlling the enforcement of regulations (*e.g.* allocation of uses), monitoring water and sanitation services, guaranteeing financial territorial solidarity across basins, and enhancing capacity-building and knowledge at national, regional, department and basin levels.

Figure 2.2. **How central governments' roles and responsibilities in water policy are defined**



Note: 17 countries participated in the Survey, but there are 18 respondents in all. As water is a regional issue in Belgium, two separate profiles were designed for the region of Flanders and Wallonia. The case of Brussels Capital City is not covered in the report.
Source: OECD Survey on Water Governance (2010).

In all OECD countries surveyed, the allocation of roles and responsibilities in water policy at central government level is primarily (but not only) defined by a specific law on water. In some cases, these laws take the form of new “acts” with strong political commitment in the framework of nationwide water policy reform, which almost cancel out and replace previous legislation. For instance, in Australia, the 2007 Water Act (amended in 2008) established an independent Murray-Darling Basin Authority to ensure sustainable management of water resources in the national interest, and empowered the Bureau of Meteorology as the primary agency responsible for managing information regarding water, and the Australian Competition and Consumer Commission to provide national regulation and advice. In other cases, any new legislation enacted has to be consistent and in line with a “major” law passed in previous decades. This is the case in Israel, where every ministry or government agency involved in establishing water-related policies or tariffs acts within the constraints of the Water Law passed by the Knesset in 1959. This 50-year old comprehensive Law includes items such as the explicit identification of the mandate of the Israeli Water Authority (the national agency that sets policies, manages, monitors and plans the national water supplies), the identification of the organisations that are authorised to work in the water sector and their respective responsibilities, the identification of necessary restrictions in water and wastewater management, as well as regulation of the methods by which water tariffs are set in each sector (domestic, agriculture, and industry).

As Figure 2.1 shows, some countries have enshrined the allocation of water policy design, implementation and regulatory roles in their national Constitution. This is the case of Belgium, Canada, Chile, France, Mexico, the Netherlands, Spain and the United States. In the United States, the Constitution limits the authority of the federal government to those powers expressly delegated, or as may reasonably be inferred from those granted. All other powers belong to the states or the people. Congress has jurisdiction over all navigable waters of the United States, controls the use of federal public lands and has authority to

sell power generated at federal dams. Treaties have been signed with Indian Tribes through which certain rights to use of water have been reserved, and the Supreme Court resolves water controversies between states. In authorising federal participation in water resource development projects, Congress seeks to maintain a reasonable balance between the powers of the federal government and those retained by the states, local governmental entities and private enterprise. Acts of Congress, and interpretations thereof by the Supreme Court, also clearly indicate that the federal government may participate to some degree in all aspects of water and related land conservation, development and management. However, in practice, the degree of federal participation and financing in water policy making is not very high and varies between planning, construction, operation and maintenance activities according to applicable precedent and law and the likelihood of widespread and general benefits.

Institutional mapping of water roles and responsibilities at sub-national government level

OECD countries' water policy making at the sub-national level: A diversity of situations

Table 2.3. Institutional mapping of water roles and responsibilities at the sub-national level

Country or region	Unitary, federal or quasi-federal country	Type of involvement (dominant role, joint role with CG, no competence)	Water resources	Water Supply (domestic)	Water budget	WUAs (yes/no)	RBOs (yes/no)
Australia	Federal	Joint role	Regions Water bodies RBOs	Municipalities Water bodies	CG SNG RBO	No	Yes
Belgium (Flanders)	Federal	Dominant role	Regions Municipalities	Regions Municipalities Intermunicipal bodies	CG SNG RBO	Yes	Yes
Belgium (Wallonia)	Federal	Dominant role		Regions Municipalities Intermunicipal bodies	CG SNG RBO	Yes	Yes
Canada	Federal	Dominant role	Regions Municipalities Intermunicipal bodies Water-specific bodies	Regions Municipalities	CG SNG	No	No
Chile	Unitary	None (except municipalities for sanitation in rural areas)	None	None	CG SNG	Yes	No
France	Unitary	Joint role	Regions RBOs	Municipalities Intermunicipal bodies	CG SNG RBO	Yes	Yes
Greece	Unitary	Joint role	Regions	Municipalities	CG SNG	n/a	Yes
Israel	Unitary	No competence	–	–	CG	No	No
Italy	Quasi-federal	Joint role	Regions RBOs Water-specific bodies Intermunicipal bodies	Municipalities	CG SNG RBO	No	Yes
Japan	Unitary	Joint role	n/a	Prefectures Municipalities	CG SNG	No	No
Korea	Unitary	Joint role	Regions Water-specific bodies	Regions Water-specific bodies	CG SNG	No	No

Table 2.3. **Institutional mapping of water roles and responsibilities at the sub-national level** (cont.)

Country or region	Unitary, federal or quasi-federal country	Type of involvement (dominant role, joint role with CG, no competence)	Water resources	Water Supply (domestic)	Water budget	WUAs (yes/no)	RBOs (yes/no)
Mexico	Federal	Joint role	Regions Municipalities Intermunicipal bodies RBOs	Regions Municipalities Intermunicipal bodies RBOs	CG SNG	Yes	Yes
Netherlands	Unitary	Dominant role	Regions Municipalities	Regions Municipalities	CG SNG	No	Yes
New Zealand	Unitary	Dominant role	Regions Intermunicipal bodies	Regions Intermunicipal bodies Municipalities	CG SNG	Yes	No
Portugal	Unitary	Joint role	RBO SNG (Azores and Madeira)	Municipalities Regional and intermunicipal bodies	CG SNG RBO RDA	Yes	Yes
Spain	Quasi-federal	Joint role	Regions RBOs	Municipalities Regions Intermunicipal bodies	CG SNG RBO RDA	Yes	Yes
United Kingdom	Unitary	Joint role	Regions Municipalities	Regions Municipalities	CG SNG	Yes	No
United States (Colorado)	Federal	Dominant role	Regions Municipalities RBO Water specific bodies	Regions Municipalities RBO Water specific bodies	CG SNG RBO RDA	Yes	No

Note: Acronyms: CG: central government; SNG: sub-national government; RBO: river basin organisation; RDA: regional development agencies.

Source: OECD Survey on Water Governance (2010).

Preliminary observations from the allocation of roles and responsibilities in water policy design, implementation and regulation at the sub-national level

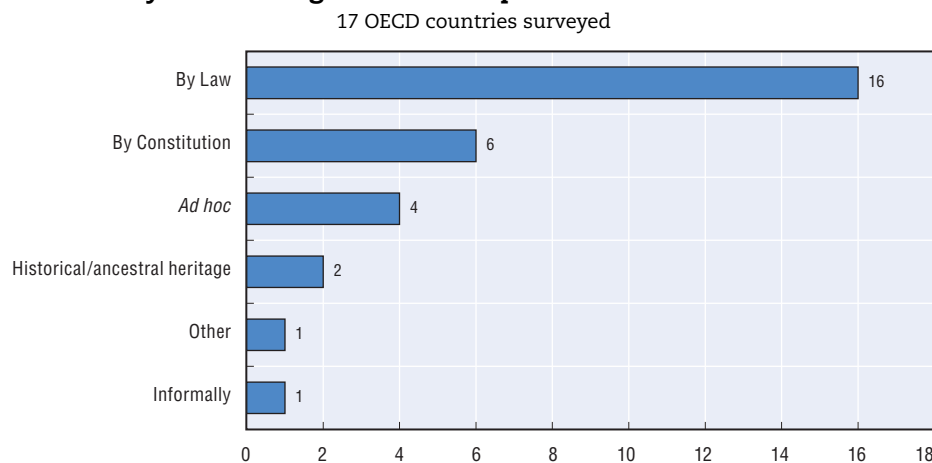
Modalities for defining the allocation of roles and responsibilities

In all OECD countries, sub-national governments have mandates to act on water governance and may make decisions that determine or influence water distribution systems and the sustainability of service delivery and resource management. Both municipal and regional authorities are well positioned to develop policy and programmatic solutions that best meet specific geographic, climatic, economic and cultural conditions. They are equally well placed to develop innovative policy solutions that can be scaled up into regional or national programmes, or to provide a laboratory for national pilot programmes on the urban level. Local governments respond to a variety of water policy goals that aim to: i) reduce water consumption; ii) reduce energy demand of water delivery systems; iii) prevent water system infiltration (into sanitary sewer systems) of groundwater due to flooding; and iv) prevent disruption to the water system due to drought. In addition, local governments and their “street-level bureaucrats” provide a direct contact point for residents on questions of water conservation. In this sense, they have a greater ability to adjust policies to adapt to changing behaviour and are more likely to influence popular water habits than higher levels of government.

In most OECD countries surveyed, the allocation of roles and responsibilities at the sub-national level is primarily defined by law, with a range of practices that vary from one country to another. While each Canadian province has its own set of laws outlining water roles and responsibilities, in Australia, the constitutional powers of states to make laws for water resources management are limited when the Commonwealth validly exercises its constitutional powers (for instance, the acquired further powers to manage water the

Murray-Darling Basin states). In Belgium, in addition to the competences of the communities and the regions granted constitutionally, specific responsibilities are established by regional decrees (on Environmental Regulation, or VLAREM, Integrated Water Management, etc.). Finally, some countries have *ad hoc* mechanisms outside legislative frameworks for allocating responsibilities at the sub-national government level. For instance, in Mexico, there are villages where daily simple or complex activities of communities, such as the organisation of drinking water assemblies that do not fall under the jurisdiction of municipalities, are subject to *customary law*. In Spain, historical bodies such as the Water Courts of Valencia and Murcia arbitrate over irrigation management issues across user communities. These were both declared world cultural intangible heritage by UNESCO and are based on customary law as well as popular and oral practices.

Figure 2.3. **Ways of defining roles and responsibilities at the sub-national level**



Source: OECD Survey on Water Governance (2010).

Overall involvement of sub-national actors in water policy design and implementation

Three categories can be distinguished with respect to the allocation of responsibilities to sub-national actors in water policy making: a first category of countries where local and regional authorities are the main actors in water resources management and service delivery; a second category where local and regional authorities play an important role in the design and implementation of water policies together with the central government; and, on the other side of the continuum, a third category of countries where sub-national governments' role in water policy making is either restricted to implementation only or non-existent.

Table 2.4. **Involvement of sub-national actors in water policy design and implementation**

Level of involvement	Examples
Main actors	United States, Canada, Belgium, Australia
Joint role with central government	France, Spain, Italy, New Zealand, Netherlands, Mexico, Portugal, United Kingdom, Japan
Main role: implementer	Israel, Chile, Korea

Source: OECD Survey on Water Governance (2010).

The first category comprises federal states with extreme geographical and hydrological disparities (e.g. United States, Canada and Australia) or strong regional characteristics (Belgium). Under the Constitution, Canadian provinces are vested with most of the proprietary and legislative responsibility for the management of natural resources, including water. The exception to this is on First Nations lands and in the northern territories of Nunavut and the Northwest Territories, where the federal government has primary water management responsibilities through the department of Indian and Northern Affairs Canada. In the United States, because of its historical legacy, geography and climatic conditions, the federal government's roles were deferred to the states as regards the allocation of water and the regulation of its use. On the ground, the allocation of responsibilities and institutional arrangements vary considerably among the 50 states, which have typically adopted permit systems that allow state agencies to allocate water rights and control its use. In Belgium, the regions are granted by the Constitution prerogatives to design and implement water policy (including drinking water policy), land development, nature conservation, public works and transport, as well as coastal and territorial waters, including infrastructure and fisheries. In Australia, state and territorial jurisdictions have their own legislation and regulation for all matters of water governance. Local governments (municipalities) are responsible for water and wastewater service delivery, including operating and maintaining water and wastewater infrastructure, metering, billing and ensuring that service delivery standards are adhered to. The Commonwealth Water Act 2007 (as amended in 2008) makes provision for the management of the water resources in the Murray Darling Basin, the largest river basin in Australia, which crosses several state boundaries.

The second category comprises countries where local and regional authorities play a *significant role* in the design and implementation of water policies, together with the central government. This is the case in France (and most European countries), where there is a national framework setting priorities for water policy (laws, decrees). Water and wastewater services for domestic and industrial use are local public services falling under the exclusive jurisdiction of municipalities. This leads to permanent joint policy making between local authorities (mainly municipalities, intermunicipal bodies and water agencies) and the central government. For example, national rules for the allocation of water uses are implemented at the territorial level by Basin Committees, and the national regulatory framework for water pricing (components of water invoices, and processes for tariff setting) is complemented by economic regulation undertaken at local level. All revenues collected by water agencies are regulated at national level by the Parliament and then set up by the relevant Basin Committee. A second example in this category is New Zealand. On the one hand, service delivery and related infrastructure (municipal water supply and wastewater disposal) is generally undertaken by territorial authorities such as district and city councils, with the exception of large municipal areas where the regional councils may assist with bulk service delivery (e.g. Wellington). Alternatively, several territorial authorities may contract with the same Council-Controlled Organisation (e.g. Watercare in Auckland). On the other hand, the Ministry for the Environment is the central government agency responsible for allocation and use. Central agencies provide national direction and develop and set regulations, including national environmental standards. They support local governments' roles in enforcing these standards, monitoring their compliance and producing related policy statements, based on national plans establishing objectives for the management of water resources.

The third category consists of countries where the role of sub-national actors mainly covers implementation, with almost no involvement in the design stage. Israel, Chile and Korea are examples of centralised water policy making, where sub-national actors are essentially considered implementers of water policies that are essentially designed at central government level. These countries have not set up river basin organisations, and mainly involve municipalities in public service delivery at local level. In Israel, the responsibility for managing water supply and sewage treatment is shared among the national actors, such as the Israeli Water Authority and five ministries (Environmental Protection, Health, Finance, Foreign Affairs, and Infrastructure). The final approval for issuing all water allocations, standards, tariffs and regulations is given by the Water Authority Council Forum. This central governing system is applied directly to municipalities, river basins and any other portions of the state of Israel. Water policy is therefore designed only at a national level, and no sub-national level regulatory body for water exists. Municipalities act as intermediary consumers, purchasing water from the national system, and supplying it to the consumers within their respective municipal boundaries. Individual consumption is measured by households' water meters, which are compulsory throughout Israel, according to a nationally specified amount per unit volume of water.

Other actors involved in water policy at the sub-national level

Beyond sub-national governments, several OECD countries have involved other types of actors in policy design and implementation at the territorial level, mainly water users' associations and river basin organisations.

Water users' associations usually consist of groups such as irrigators, who pool their financial, technical, material and human resources to operate and maintain a water system. A Water Users' Association (WUA) often elects leaders, handles disputes internally, collects fees and carries out maintenance. In most areas, WUA membership depends on relationship to a water source (such as groundwater or a canal). Water user associations are widespread, but in some cases they are active only in specific areas (*e.g.* rural areas). Some countries (New Zealand, Portugal, Mexico, and Chile) have engaged water users' associations in policy making only recently, while others (France, Spain) have accumulated significant experience in this field.

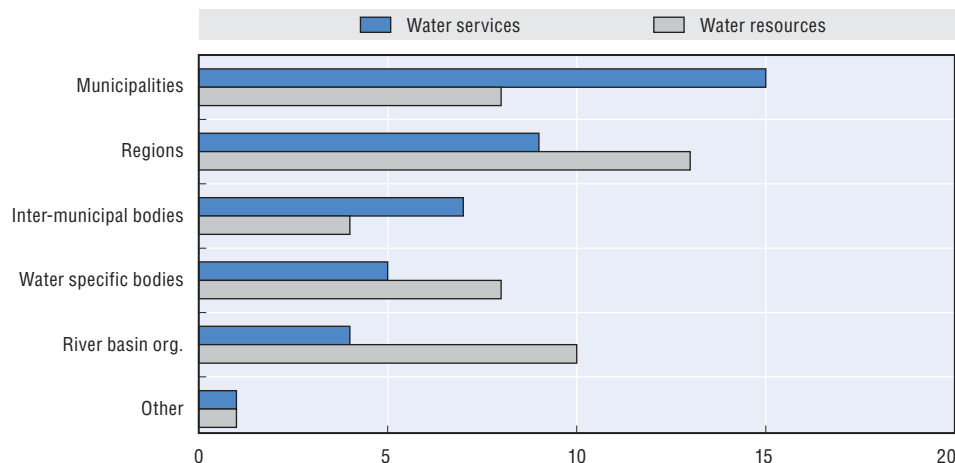
Where they exist, river basin organisations and water-specific bodies also play a significant role in water policy implementation at the territorial level. Examples can be found in Australia (Murray-Darling Basin Authority), France (6 *Agences de l'Eau*), Mexico (25 *organismos de cuenca*), Portugal (five *Administrações de Região Hidrográfica*), the Netherlands (Water Boards) and Spain (9 *confederaciones hidrográficas*). In Spain, river basin authorities are the primary actors when basins cover more than one autonomous region; if not, jurisdiction lies mainly with the regions.⁷

Sub-national actors in water policy at the territorial level

A closer look at the prerogatives of sub-national actors involved in water policy making, in the countries where they play an important role, reveals common trends in OECD regions. As regards water resources management (and this is also true for water services for agricultural users), *regions* are the primary sub-national authority responsible for (co-)designing and implementing policies in two-thirds of the OECD countries surveyed. The second type of sub-national authority involved is the *river basin organisation*, followed by *water-specific bodies* such as Water Boards in the Netherlands. In the case of water supply

Figure 2.4. **Type of sub-national actors involved in water resources management and service delivery**

17 OECD countries surveyed



Source: OECD Survey on Water Governance (2010).

for domestic use, in almost all OECD countries surveyed, *municipalities* are the primary sub-national authorities in charge of (co-)designing and/or implementing policies. They are followed by regions and intermunicipal bodies. The trend is similar in the areas of water supply to industrial users and wastewater treatment. As water is a local resource with strong territorial characteristics, the explanation for sub-national actors' involvement lies mainly in theories related to local public goods, and the need for decentralised mechanisms to achieve optimal allocation.⁸ But in practice, the implementation of such an optimal water allocation scheme varies widely across countries and rarely involves a full delegation of responsibility to lower levels of government. Water management is generally a *shared* responsibility across levels of government.

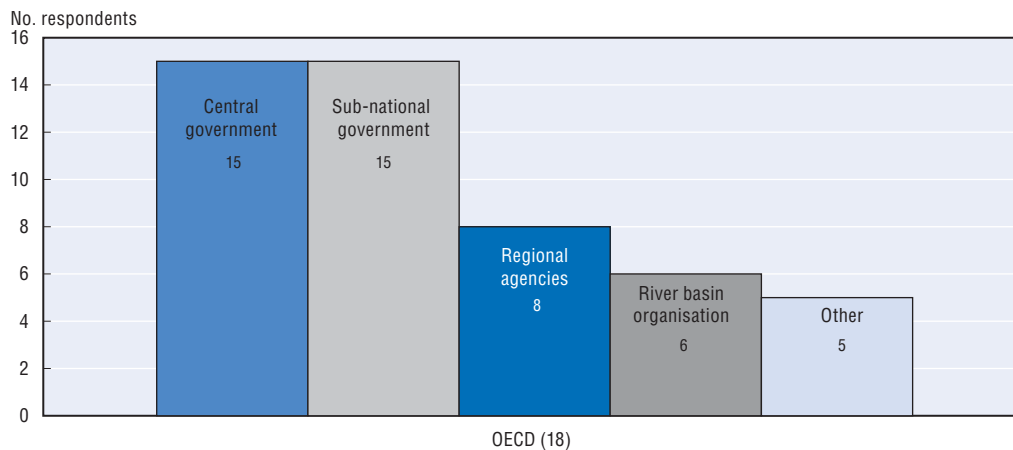
Actors involved in water policy budgets

In most OECD countries surveyed, central and sub-national governments are the main actors in water policy budgets, followed closely by regional development agencies and river basin organisations (see Figure 2.5).

Sub-national governments involved in water financing include a wide variety of authorities, ranging from state and territorial governments in Australia, regional ministerial departments in Belgium, regions in Italy, metropolitan areas in Korea, provinces and Water Boards in the Netherlands, district, city and regional councils in New Zealand, and State Water Conservancy districts in the United States. In France, the three levels of sub-national government are involved. Municipalities, which are usually in charge of delivering water to the public, can also engage in contracts for water resources management (*e.g.* river contracts) for planning purposes. *Départements* (the sub-national government between the municipal and regional layers) contribute to territorial development and rural equipment by granting financial subsidies to municipalities for investments related to water and sanitation infrastructure. Regions can also co-fund water and sanitation networks under the framework of the *Contrat de Plan État-Régions*.

The involvement of the central government in water policy budgets is very high in several OECD countries. In Spain, the overall budget of the General Water Directorate,

Figure 2.5. **Type of actors involved in water policy budgets**
17 OECD countries surveyed



Source: OECD Survey on Water Governance (2010).

including the river basins' budget, was estimated at EUR 2 759 million in 2010. In France, EUR 272 million was budgeted in 2010 for “managing biodiversity”, part of which was allocated to the organisation and monitoring of water policies. This funding does not include *crédits d'intervention*, which are set up by water agencies based on their revenue collection. The state of Colorado, through several agencies, funds projects and receives funding assistance from federal agencies such as the Bureau of Reclamation or the US Army Corps of Engineers. In Korea, the five ministries involved in water policy contribute to the budget while in Mexico the contribution of the federal government takes the form of transfers via federal programmes to lower levels of government (mainly state governments). Besides, in the case of CONAGUA, the Mexican national water commission, additional federal resources are allocated to specific programmes such as PROMAGUA (by the FONADIN, the national fund for infrastructure, and PRODDER (*Programa de Devolución de Derechos*), a programme based on the payment of fees for the use and exploitation of national water resources by service operators. In 2008, investments from the Mexican federal government in the water sector were estimated at MXN 13.9 million, of which MXN 12.3 million were allocated to CONAGUA.⁹

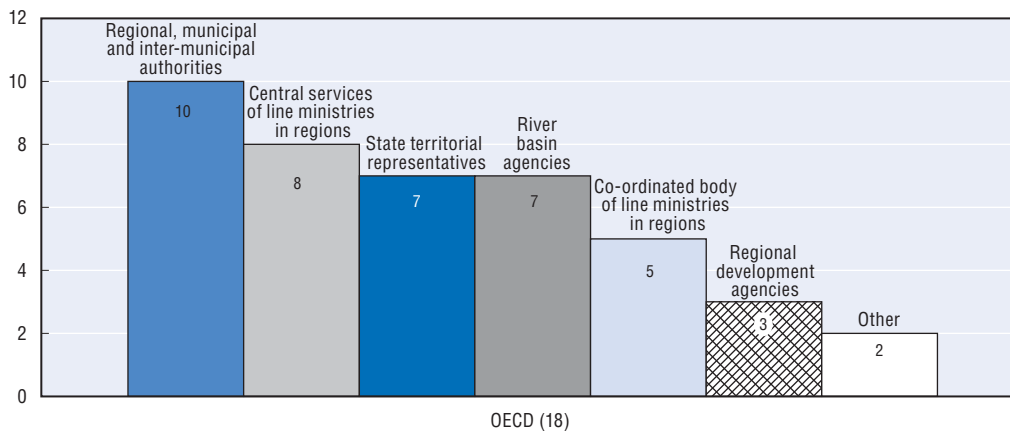
River basin organisations are the third type of actor regarding budgets related to water policies. Regional agencies also play an important role in the water policy budget in Belgium (e.g. SPGE for collective sanitation, Flemish Environment Agency, etc.), Italy (*Ambito Territoriale Ottimale*, AATO), Korea (MLTM Regional Construction Management Administrations, MOE Basic Environmental Office, Water System Fund, K-Water), as well as in the United Kingdom, where Natural England operates an agri-environment scheme that can include activities for the benefit of water resources management, and under which land managers can receive payments for adopting good practices.

Implementation of water policies at the territorial level

In almost two-thirds of OECD countries surveyed, regions, municipalities and intermunicipal bodies are the primary actors in charge of implementing central government policies at the sub-national level. In Australia, co-operative arrangements have led to agreements between Commonwealth, State and Territory agencies for primary responsibility

Figure 2.6. **Who implements central government water policies at the sub-national level?**

17 OECD countries surveyed



Source: OECD Survey on Water Governance (2010).

in water policy. In France, municipalities and intermunicipal bodies are the primary actors for drinking water supply and sanitation, while regional and departmental bodies as well as irrigation groups are in charge of aquifer and river management. In New Zealand, regional councils (roughly defined by key catchment areas) are the primary organisations with decision-making authority over water resources. In addition, there are five unitary councils that have the same responsibilities for implementing and developing water policy within their jurisdiction as the regional councils, as well as municipal councils (territorial authorities) responsible for managing water supply within their areas of jurisdiction.

In almost half of OECD countries surveyed, central services of line ministries in regions and State Territorial Representatives (STR) are key actors in the implementation of water policies at the territorial level.¹⁰ This is the case in unitary countries such as Israel (Israeli Water Authority) and Korea, where water policy making is strongly centralised. In such cases, representatives of line ministries in regions are the *only* actors in charge of implementation at sub-national level, whether these are central services or co-ordinated bodies of central services. However, central services and bodies representing line ministries in regions also play an important role – with other sub-national actors – in countries that have somewhat decentralised their water policy making, whether these are federal states, such as Belgium, or unitary, such as New Zealand. In addition, Mexico has *Water Commissions* in each autonomous community, while in France the STR is in charge of co-ordinating the actions of the central government, regions and *départements* for a homogeneous implementation of water policies at basin level, co-ordinating central services of line ministries in regions and monitoring the enforcement of water regulations and compliance with them.

To summarise, despite the diversity of situations at the sub-national level governing the implementation of water policies designed by the central government, two categories of countries can be distinguished. A first category includes countries where implementation of water policies at the sub-national level essentially relies on a single type of actors, *i.e. representatives of central government in regions*; and a second category includes countries with a combination of several sub-national authorities' responsibilities in the implementation stage. This often, if not invariably, reflects how decentralised water policies have become across OECD countries.

Table 2.5. **Implementation of central government water policies at the territorial level**

Where responsibility for implementation lies	Examples
A few types of actors, mainly state territorial representatives or deconcentrated bodies/services	Chile, Israel, Korea
A multiplicity of actors, municipalities, intermunicipal bodies, regions, RBOs, etc.	France, Mexico, Italy, United States, Canada, Australia, Spain

Source: OECD Survey on Water Governance (2010).

Main conclusions from OECD countries' institutional organisation of water policy

No master plan exists for assigning competences across ministries and levels of government in the water sector, but common trends across countries can be noted. Environmental responsibilities (water, waste, roads, urban planning) are often managed at the local level, with sub-national spending in this area accounting for 75% of total government expenditure. While no hard and fast rules can be applied, municipalities are generally responsible for providing and managing service delivery (water and wastewater), while higher-tier local governments (*e.g.* regions, provinces) are responsible for competences associated with resources management. A holistic approach is called for in designing the institutional mapping, because some roles and responsibilities can complement with or neutralise each other at central and sub-national levels.

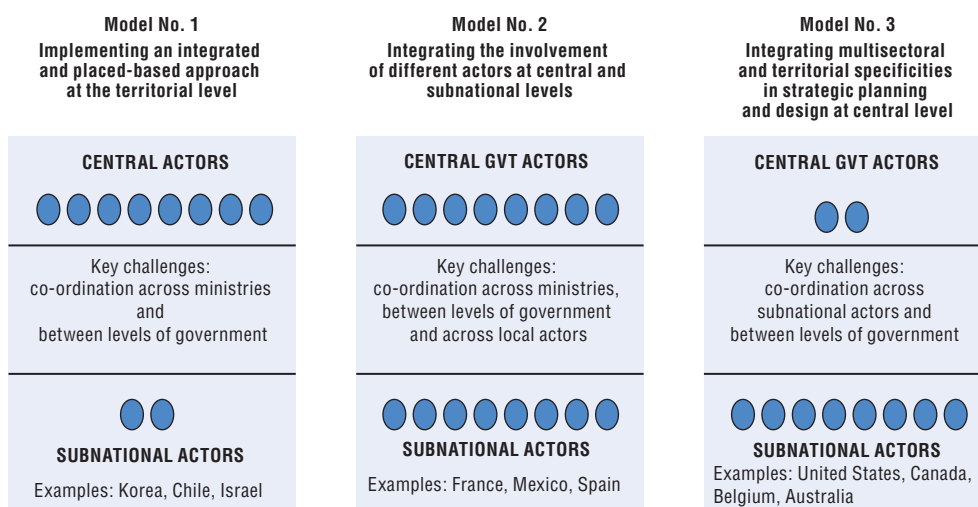
No systematic correlation can be drawn between a given country's institutional organisation (unitary *versus* federal) and the institutional mapping of water policy. There is a diversity of situations across OECD federal and unitary states in terms of the institutional organisation of water policy. On the one hand, some federal countries (United States, Canada, Belgium) have delegated many water responsibilities to lower levels of government, while in other federal states (Mexico, Australia) the central government still plays a strong role (*e.g.* strategic planning, regulation, etc.) in ongoing water policy reforms, not only in terms of design but also at implementation levels. On the other hand, though some unitary states still retain significant water responsibilities at central government level, with highly centralised water policy making (Korea, Chile, Israel), most OECD unitary states (France, New Zealand, Greece, the Netherlands) have *de facto* delegated many responsibilities to lower levels of government.

River basin organisations have been set up in federal and unitary countries alike, depending on institutional factors, hydrological considerations and international incentives or regulations. All the federal or quasi-federal countries surveyed (Australia, Belgium, United States, Spain, Italy, and Mexico) have created river basin organisations, but more detailed study of these experiences reveals a diversity of situations, which reflect the varying degrees of "maturity of decentralisation" in water policy making. Indeed, while Spain is a pioneer country in river basin management (creation of the Ebro Basin Authority dates back to 1926), some federal states have only recently moved in this direction. This is the case for Australia, which recently created the Murray Darling Basin Authority and Mexico, where river basin authorities have recently developed from the existing regional offices of the National Water Commission. In unitary states, a diversity of situations prevail. Some countries have not set up river basin organisations (Chile, Korea, England and Wales, Japan, and Israel) either because of centralised water policy making, territorially concentrated areas or an absence of rivers. Others created river basin

authorities a long time ago (France) or within the context of supranational incentives or regulations such as the *European Union Water Framework Directive*.

Based on the comparison of the allocation of roles and responsibilities at central and sub-national level in a series of OECD countries, the following diagrams tentatively define three models, raising different governance challenges related to the frequent “paradox of decentralisation” and the need to manage the relationship between “diversity” – to customise water policy according to territorial specificities – and “coherence”, i.e. the need to adopt a holistic and integrated approach to water policy. These models are not intended as normative in the sense that one would be better than the other, but they highlight different co-ordination challenges raised by a given institutional organisation of water policy even if – within a same “category” – the degree to which governance challenges have an impact on the performance of water policy may vary from one country to another. In most cases, countries have developed a series of mechanisms to address institutional challenges mentioned below.

Figure 2.7. **Tentative categories based on the allocation of roles and responsibilities in water policy**



These models could be further developed in the framework of water-specific policy dialogues with selected countries and regions. In addition to outlining the challenges to co-ordination, they could be enriched by adding other dimensions (e.g. capacity gaps, variety of tools in use, etc.), to produce a more elaborate matrix linking each model with policy objectives and desired outcomes. This would support the hypothesis that regardless of the model adopted (which is often dependent on institutional legacy and not always under government control), the same policy goals can be achieved with a combination of different governance instruments.

Conclusion

It is widely acknowledged that fragmentation of administrative and legal water frameworks should be avoided. To do so, detailed roadmaps should be defined for each step, from the definition of water policy objectives, constraints and outcomes in general, to standards and tariff setting and subsidies allocation, risk analysis and distribution, as well as the identification of legal and institutional frameworks.

In practice, the multiplicity of actors across ministries and public agencies, between levels of government and at the sub-national level intrinsically raises multi-level governance challenges. In the past few decades, this trend has been exacerbated by the increasing involvement of local actors (for whom water is a local concern) and supranational ones (for whom water is a global concern). At central government level, there is a wide diversity of policy areas related to water policy making (*e.g.* energy, agriculture, territorial development, health, public works/infrastructure, economy, finance, etc.). Because of the sectoral fragmentation of water-related tasks across ministries and public agencies, policy makers constantly face conflicting objectives and the temptation of retreating into silo approaches. At sub-national government level, a diversity of “local” actors are involved in water policy making (municipalities, intermunicipal bodies, regions, river basin authorities, regional development agencies, water users’ associations, etc.). This may generate obstacles in managing the interface between different local actors and building capacity at the sub-national level. Finally, because most OECD countries have decentralised their water policy making, joint action is required between central government and sub-national actors in the design, regulation and implementation stages of water policy. This requires overcoming obstacles related to co-ordination across levels of government. The following chapter introduces such challenges, through the OECD *Multi-level Governance Framework*, for diagnosing capacity and co-ordination “gaps” in water policy.

Notes

1. There is a total of 18 “profiles” for the 17 countries surveyed. As water is a regional issue in Belgium, two separate profiles were designed for the region of *Flanders* and *Wallonia*. The case of *Brussels Capital City* is not covered in the report.
2. For such cases, to avoid interpretations of the systems rather than general assessment, the methodological choice was made to collect institutional data at the sub-national level, *e.g.* Colorado in the case of the United States, and Wallonia and Flanders region for Belgium.
3. In the case of the Netherlands, the number is now reduced to 1 (v. 2) since a new Ministry of Infrastructure and the Environment was created in 2011 and merges the competences of the former Ministry of Transport, Public Works and Water Management, and Ministry of Housing, Spatial Planning and the Environment.
4. In the United Kingdom, in addition to OFWAT, regulatory powers are spread across two other entities: the Environment Agency (EA) (www.environment-agency.gov.uk), and the Drinking Water Inspectorate (DWI) (www.dwi.gov.uk). The EA is in charge of environmental regulation as an executive non-departmental public body responsible to the Secretary of State for Environment, Food and Rural Affairs and an Assembly-sponsored public body responsible to the National Assembly for Wales. It aims to protect and improve the environment, and to promote sustainable development. It plays a central role in delivering the environmental priorities of central government and the Welsh Assembly Government. The DWI was formed in 1990 to provide independent reassurance that water supplies in England and Wales are safe and drinking water quality is acceptable to consumers. It scrutinises activities of companies that supply drinking water to consumers in England and Wales, works with other stakeholders for the improvement of drinking water quality and to secure drinking water safety, commissions research to build a sound evidence base on drinking water quality; and publishes data on drinking water quality in England and Wales.
5. www.siss.cl.
6. www.onema.fr.
7. Chapter 4 will focus on river basin organisations as a governance co-ordination and capacity-building tool. The objective of this section is merely to introduce them as important actors in water policy, without extensive details at this stage.

8. For further thoughts on this subject, see Suzanne Scotchmer: *Local Public Goods and Clubs: Handbook of Public Economics*, 2005.
9. In 2008, investments from state governments were equivalent to MXN 7.3 million and municipal investments MXN 3.55 million.
10. See *The State Territorial Representatives and Water Management*, 15th European days of STR, May 2009, Stockholm, www.ab.lst.se/upload/dokument/nyheter/Program_Europeandays.pdf.

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Chapter 3

Challenges to Co-ordinating Water Policies Across Ministries and Levels of Government

This chapter aims to identify the main obstacles preventing the design and implementation of integrated and coherent water policies in OECD countries. Taking a closer look at the interplay between the different public actors involved in water policy making, the chapter proposes a tentative taxonomy of the main governance challenges, based on selected indicators and data collection from the OECD survey on water governance. Detailed horizontal and vertical co-ordination challenges for 17 OECD countries are synthesised in the country profiles attached to this report.

Introduction

Whilst there is a global acknowledgement that institutions “matter” in the water sector and that good governance is a key condition for success, little research has been undertaken to try to “measure” the level of fragmentation and related governance challenges experienced by countries when designing and implementing water policies, in a non-normative way. Taking stock of existing principles, guidelines, indicators, indexes and checklists for good governance in the water sector, this chapter presents a “reading template” identifying seven common multi-level governance “gaps” and attempts to assess, based on selected proxies, their importance in several OECD countries. The overall objective is neither to *rank* countries nor to determine an *optimal* level of governance, but rather identify categories of countries facing similar challenges in order to facilitate peer-review dialogues and learn from experiences within the OECD region when seeking appropriate policy responses.

Methodology for evaluating governance challenges in OECD countries’ water policy making

The assessment of OECD countries’ challenges proposed in this section is based on the OECD *Multi-level Governance Framework* (Chapter 1) and data collection from the 2010 OECD Survey on water governance. In the 17 countries surveyed, respondents from central administrations, river basin organisations and regulatory agencies were asked to rank a series of water governance challenges from 1 (not important) to 3 (very important), according to a set of indicators attempting to illustrate each of the multi-level governance gaps. Though several elements contribute to the 7 broad governance challenges previously described, one proxy indicator per gap has been selected to facilitate the analysis. Table 3.1 summarises the main proxy indicators that were selected for the different gaps in order to design categories of water governance challenges in OECD countries.¹

Table 3.1. **Proxies for measuring multi-level governance gaps in water policy**

Multi-level governance gaps	Proxy indicator
Policy gap	Overlapping, unclear allocation of roles and responsibilities
Administrative gap	Mismatch between hydrological and administrative boundaries
Information gap	Asymmetries of information between central and sub-national governments
Capacity gap	Lack of technical capacity, staff, time, knowledge and infrastructure
Funding gap	Unstable or insufficient revenues of sub-national governments to effectively implement water policies
Objective gap	Intensive competition between different ministries
Accountability gap	Lack of citizen concern about water policy and low involvement of water users’ associations

The assessment of each gap is based on a single proxy indicator, considered as likely to raise co-ordination challenges. But in practice, such an evaluation should also be complemented by other criteria and factual data. For instance, respondents’ perceptions of a mismatch between hydrological and administrative boundaries is a key element for

evaluating the *administrative gap*, but additional elements should also be considered, such as the type and number of sub-national governments involved in design, regulation and implementation of water policies. While the perception of overlapping, unclear or non-existent allocation of responsibilities is crucial to measure the *policy gap*, other types of information are enlightening. These include processes for defining the allocation of roles and the type and number of central government authorities involved in water policy design, regulation and implementation. Regarding the *funding gap*, respondents' opinions on the impact of unstable or insufficient revenues of sub-national governments on the implementation of water policies is an interesting indicator. But a closer look at the types of actors (central, sub-national) involved in water policy budgets is also critical. Respondents' opinions on the impact of the lack of citizens' involvement on water policy implementation is clearly relevant for measuring the *accountability gap*, which in addition can also be approached via the interference of lobbies in water policies. A final example is the *objective gap*, which is measured here by respondents' opinions on the intensive competition between different ministries, but could also be approached by the possible contradiction between the national organisation and supranational recommendations and directives.

A tentative classification of OECD countries' multi-level governance challenges in water policy

Table 3.2 provides an overview of where multi-level governance co-ordination gaps are considered *important* or *very important* in OECD regions, based on responses to the 2010 Survey on Water Governance. The objective is to produce “stylised features” that are analysed in the light of existing co-ordination tools, allowing for a customisation and integration of water policy (Chapters 3 and 4).

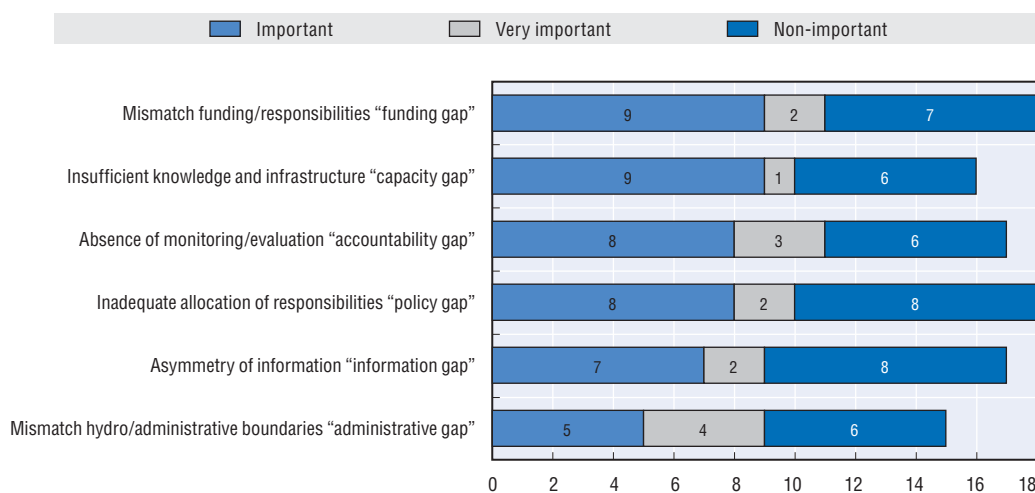
Table 3.2. **Key multi-level governance challenges in OECD countries' water policy making**

“Important” or “very important” gap	No. of countries or regions	Examples of countries or regions
Funding gap	11 out of 17	Australia, Belgium (Flanders), Chile, France, Greece, Israel, Korea, Mexico, New Zealand, Portugal, Spain, United States (Colorado)
Capacity gap	11 out of 17	Australia, Belgium (Flanders), Chile, Greece, Italy, Korea, Netherlands, Portugal, Spain, United Kingdom, United States (Colorado)
Policy gap	9 out of 17	Belgium (Flanders), Canada, France (sub-national actor), Greece, Israel, Italy, Korea, Spain (sub-national actor), United States (Colorado)
Administrative gap	9 out of 17	Australia, Greece, Italy, Korea, Netherlands, Portugal, Spain, United Kingdom, United States (Colorado)
Information gap	9 out of 17	Australia, Chile, Italy, Korea, Netherlands, New Zealand (sub-national actor), United Kingdom, United States (Colorado)
Accountability gap	9 out of 17	Belgium (Flanders), Chile, Greece, Italy, Korea, Mexico, Netherlands, Portugal, United States (Colorado)
Objective gap	4 out of 17	Belgium (Flanders), Israel, Korea, Portugal

Note: The mention to the “sub-national actor” means that the assessment was provided by the response to the questionnaire of a sub-national entity (e.g. Agence RMC in the case of France and ULG for New Zealand).

Source: OECD Survey on Water Governance (2010).

A closer look at each of these gaps is provided in order of importance, except for the *policy gap*, which called for more detail and justified a more specific focus at the end of the section.² As Figure 3.1 shows, the degree to which effective co-ordination and implementation of integrated water policy may be hindered by multi-level governance gaps varies in OECD region, but common challenges have been identified.

Figure 3.1. **Multi-level governance gaps in OECD countries' water policy making**

Source: OECD Survey on Water Governance (2010).

The funding gap

The main obstacle to vertical co-ordination and effective implementation of water policies in OECD region is the *funding gap*. More than two-thirds of the countries surveyed consider that the absence of stable and sufficient revenues of sub-national actors is a primary challenge for co-ordinating water policy between levels of government and for building capacity at the sub-national level. A more detailed analysis of this topic would require a clear dissociation between the different water cycles (services, ecosystems and natural resources), since they do not raise the same financing challenges. But in both cases

Box 3.1. The ultimate revenues of the water sector: The 3Ts, Taxes, Tariffs, Transfers

Strategic financial planning that blends tariffs, taxes and transfers – the 3Ts – provides an important means of agreeing on water-related investment targets, and how they will be achieved; it can also help leverage additional sources of finance.

Establishing the water sector on a financially sustainable basis requires finding the right mix between the ultimate revenues for the water sector, the so-called “3Ts”: tariffs, taxes and transfers (primarily Official Development Assistance, or ODA, grants). Revenues from these sources must increase in order to cover the costs of achieving agreed policy objectives for the provision of water supply and sanitation services. This contributes to “sustainable cost recovery”, which, on the basis of country experience, is now considered a more realistic and practical policy than full-cost recovery based on tariffs alone.

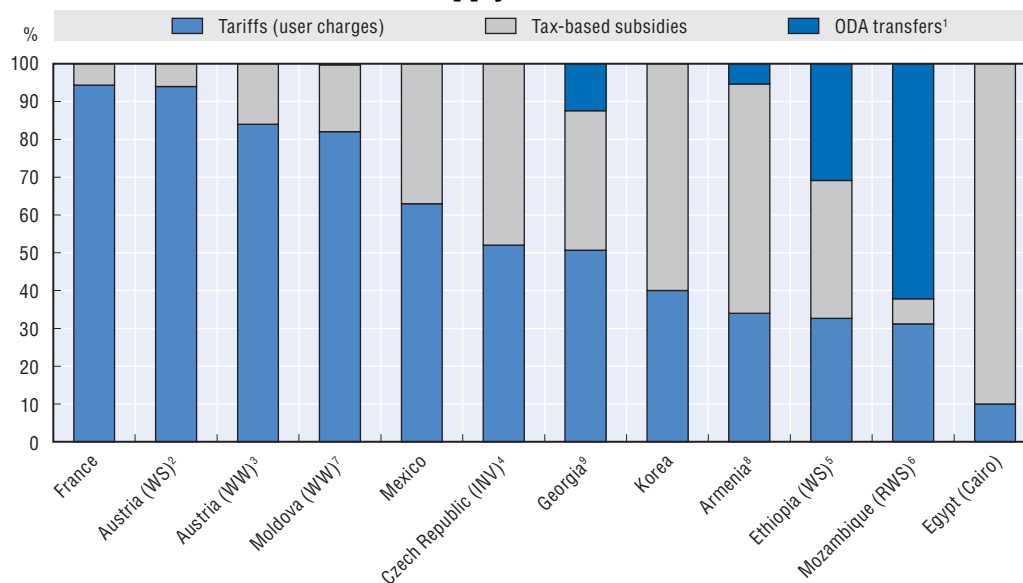
Even in the most developed countries, covering costs solely on the basis of tariffs may not sufficiently justify the burden this would place on the poorest consumers, or of the merit or public goods character of some services, particularly sanitation. In less developed countries, the absence, or inability, of capital and financial markets to provide the resources required to cover the high upfront costs associated with investment in water and sanitation infrastructure also limits reliance on tariffs as the exclusive source of revenue. Support from public budgets (or ODA) may then be justified to address these issues

(water resources and services), identifying and assessing financial mechanisms for sustainable water policies is critical.

Though the *funding gap* is not considered as important in France, Italy and the Netherlands, it is still a major concern for Korea, New Zealand and Mexico. In such cases, states often do not have the financial and capacity resources to carry out their water responsibilities, especially in rural areas, which heavily rely on grants and transfers from the federal government to build, extend and maintain infrastructure.

Every country must find its own balance among the three basic sources of finance in the water sector. As Figure 3.2 shows, this can be achieved in various ways. Typically, the most developed economies, most of whose population is connected to water and sanitation infrastructure, rely largely on tariffs. But even in such economies, public budgets based on taxes are often important. Public budgets have played a major role in financing initial investments in water infrastructure in virtually every country. Figure 3.2 also shows that public budgets in countries such as the Czech Republic, Korea and Mexico account for between 40% and 60% of water-related investments. Official development assistance can be an important source of investment capital, but in many developing countries, it plays a marginal role.³

Figure 3.2. **Shares of tariffs, taxes and transfers (ODA) in financing water supply and sanitation**



1. Includes ODA grants as well as private grants, such as through non-governmental organisations.
 2. WS = water supply.
 3. WW = wastewater.
 4. CZ Inv WSS = Czech Republic, composition of capital investment for water supply and sanitation.
 5. 2005/06.
 6. Rural WS, 2006.
 7. 2006.
 8. 2005.
 9. 2007.
- Source: OECD (2009d).

In addition to co-ordination between levels of government, the *funding* (or *fiscal*) *gap* can also hinder co-ordination across ministries, thus affecting implementation of water policies. Asymmetries of revenue and funding are also likely to undermine the

co-ordination of water policies across ministries and public agencies. A ministry with a higher budget will have more ability to tilt policy towards its own agenda, which may be problematic if that agenda is not coherent with that of the other ministry. Often, ministries of finance and economy are not directly involved in making decisions during water policy reforms, which can raise implementation challenges at a later stage. The finance arrangements of ministries may hinder the adoption of more coherent policies. In Israel, for example, the Israeli Water Authority (IWA) is responsible for the national water management plan and for the budget (setting the tariffs and deciding on the expenses). IWA obtains the funds to run the national water-management plan from the state of Israel's national budget, rather than directly from the water payments of the users via tariffs. The fact that revenues from water tariffs are not allocated straight to the IWA raises efficiency considerations as well as inadequacies in funding in many areas. Readjustment of intergovernmental responsibilities for strategic water financial planning is therefore a national goal for the coming few years.

The capacity gap

Like the *funding gap*, another important multi-level governance challenge noted by OECD countries surveyed is the *capacity gap*. This refers not only to the technical knowledge and expertise, but also to the lack of staff and time as well as obsolete infrastructure. This is an interesting result, since governments often tend to consider capacity issues in the water sector a major concern for developing countries rather than for developed ones. While OECD countries have indeed largely expanded water and sanitation infrastructure over the past decades, there are now significant issues related to their maintenance and adaptation to new water challenges. In particular, the new technologies and innovative water processes introduced in response to cost-effectiveness objectives, water scarcity and climate change (desalination, nanotechnologies, spatial technologies, recycling of water use, etc.) require transfers of know-how at the sub-national level, especially when service delivery is not managed by the private sector. Spain and France are examples of OECD leaders in the application of technologies and establishment of international standards on new water technology implementation and management of irrigation. More generally, in OECD countries, some skill sets are in good supply (e.g. mechanical engineering) while others may still be in need of reinforcement (e.g. planning, hydrology, climatology, financing) to implement integrated management.

In focusing on capacity-building needs, one may recall the guidance in the *Dublin Statement on water and sustainable development*. It invites countries to identify, as part of their national development plans, training needs for water resources and management. It also suggests they take steps internally, if necessary with technical co-operation agencies, to provide the required training and working conditions to retain trained personnel. The statement notes that governments must assess their own capacity to equip their water and other specialists to implement the full range of activities for integrated water resources management. This requires providing an enabling environment, that is, institutional and legal arrangements for effective water-demand management. In addition, raising awareness is a vital part of a participatory approach to water resources management. Information, education and communication support programmes must be an integral part of the development process.

In many OECD countries, the lack of expertise and competent staff is a major threat to the implementation of the water reform agenda. Water managers today deal with a wider range of issues than in the past, and catchments have been subject to more modification and are more ecologically fragile than they used to be. Discrepancies in knowledge, information, technical expertise and enforcement capacity across ministries and between levels of government can create obstacles to integrated water policy.

Insufficient knowledge and infrastructure is still an important obstacle to vertical co-ordination of water policy. Greece is a prominent example within OECD countries. It is behind schedule in the implementation of the European Union's Urban Wastewater Treatment Directive of 1991, which required all municipal wastewater to be treated by 2005. For example, Greece's biggest cities are in compliance with the directive, but smaller municipalities face major obstacles related to infrastructure. In 2002, only not all wastewater treatment plants discharging in sensitive areas had achieved the treatment efficiency required by the EU Directive. As regards cities discharging into areas that were not declared sensitive, in 2002, Greece had achieved a low compliance rate, providing secondary treatment for less than 50% of the concerned wastewater load.⁴

The administrative gap

The *administrative gap* is an important governance challenge for half the OECD countries surveyed, among EU and non-EU member states alike. In Korea, the largest problem in water resource management is the lack of fit between administrative zones and hydrological boundaries. This deters effective river management, which requires integrated planning. Municipalities take only their own perspectives and plans in to account in executing their budgets, and the lack of an integrated approach and territorially customised water policy compromises the efficiency of budget execution. In the Netherlands, which is subject to the EU Water Directive, the mismatch between hydrological and administrative boundaries is still somewhat important, despite the division of river basins between different Water Boards and the jurisdiction of the Directorate-General for Public Works and Water Management. This is mainly due to the fragmentation of sub-national responsibilities and imprecise allocation of roles. For instance, both municipalities and water boards are responsible for wastewater transport pipes. The Union of Water Boards is currently working towards a clearer distinction of responsibilities between provinces, Ministry of Transport, Public Works and Water Management, municipalities and the Water Boards. In the United States, the mismatch between hydrological and administrative boundaries is exacerbated by the fact that urban areas need water supplies from the mountains and as a result, often administer reservoirs that are hundreds of miles away.

The information gap

The *information gap* remains a prominent obstacle to effective water policy implementation in half of the OECD countries surveyed. In particular, adequate information generation and sharing among relevant actors as well as scattering and fragmentation of the generated primary water and environmental data are important bottlenecks across ministries, agencies and levels of government involved in water policy. In addition, substantive problems with data inhibit integrated water policies in several ways (including jargon, a mix of terminologies, unclear definitions, overlapping meanings of terms related to water, etc.). New Zealand and Australia are two OECD countries where

the *information gap* is a major concern for policy makers. In New Zealand, the lack of common information and a common national frame of reference has historically been the largest hurdle. No mandated methodology for calculating quantity limits has ever been established that reflects ecological values and wider community outcomes. Obtaining such information is a critical first step for developing a comprehensive system of water management at national level. To some extent, this information is already collected by local government, but central government leadership is essential to make sure that the information reported is robust, consistent and defensible. Only then can the necessary decisions to balance access to fresh water amongst competing interests be made. In Australia, most data have historically been collected by the states and are often not consistent or comparable at a national level. Further research is needed to provide a comprehensive understanding of Australia's water resources, despite the strong commitment by the Australian government to address these information gaps.⁵

The accountability gap

The *accountability gap* is noted as an obstacle to water policy implementation in half the OECD countries surveyed. Generally, the main issues relate to a lack of public concern and low involvement of water users' associations in policy making. But challenges related to the evaluation of water policies at central and sub-national level are also crucial to approach the accountability gap. Inadequate monitoring, reporting, sharing and dissemination of water policy performance also prevent policy coherence at horizontal and vertical levels. Periodic assessment of progress toward established policy goals is vital for understanding whether the applied efforts are effective and for adjusting policy where necessary. But feasibility is often limited due to considerations of political, financial and capacity, and this complicates the implementation of central government decisions at the sub-national level. In Greece, Israel and Italy, the absence of monitoring and evaluation of water policy outcomes were considered important obstacles to water policy implementation at the territorial level. In Israel, the outcome of national water policies is not always quantified in a timely manner, due to difficulties in obtaining the relevant data from the IWA database. A complete reorganisation of the database is needed to provide clear results from policy changes. In addition, no incentives or specific rules exist to encourage companies responsible for pumping, purifying and transporting water to consumers, to produce relevant data on the quantity and quality of the transported water and the remaining water reserves. At present, such companies sometimes do not supply data when requested, in order to avoid the subsequent additional restrictions that would occur on the basis of the information in the data (vested interests). The idea was mooted of setting up a separate independent monitoring team to collect such data, but with insufficient funding, it seems unlikely that independent monitoring programmes can be set up.

The objective gap

OECD countries also experience an *objective gap* in striking a balance between the often conflicting objectives in financial, economic, social, environmental areas for collective enforcement of water policy. One significant example is the design of water-pricing policies, which is often complicated by the need to balance financial and social objectives. Historically, water has been significantly under-priced, so price increases can pose a political challenge. Conversely, if tariff structures are not properly designed with social considerations in mind, price increases may disproportionately affect poorer households.

Policy coherence across sectors is therefore crucial, as regional development, land management, agriculture and even energy policies also affect water demand. In addition, water outcomes are often driven by decisions made in policy areas over which water managers have little or no say. For example, irrigation water users respond to water prices, but also to energy and output prices and to the support they receive from governments. Besides, agriculture is the largest consumer of water and source of water pollution. Support for agricultural production and subsidies for variable inputs continue to misalign incentives to farmers and aggravate overuse and pollution of water. In the context of climate change, the water-energy nexus is also emerging as a critical policy area. The development of non-fossil fuel energy sources, such as hydropower and biofuels, has put serious pressure on water resources. Furthermore, the development of alternative water sources (such as desalination and reuse) consumes large quantities of energy; and water scarcity may force the closure of power plants that require fresh water for cooling. A gap in objectives can also occur between rural and urban areas, and upstream and downstream states. Such conflicting interests ineluctably undermine effective implementation of responsibilities at central government level in collective enforcement of water policies, especially when legislation is outdated.

The *objective gap* affects OECD unitary and federal countries alike. Korea is a unitary country where coherence is compromised by the competition between the five ministries involved in water policy, and by overlapping roles and responsibilities in water management. Tasks are divided in some instances, but are unclear overall. For example, river management requires the consideration of sufficient water quantity, flood control and the environmental functions of rivers. However, this is difficult to achieve in ecological restoration of rivers, especially when no national committee or policy organisation structure exists to bring the different actors together and create room for regular dialogue to prevent and manage possible overlaps. Water management cuts across many strategic directions and a lack of real recognition of conflicts between different government policies (e.g. energy and water) regularly creates difficulties for local and regional authorities. A more holistic perspective is therefore needed from the centre, which acknowledges the conflicts undermining successful water management and sets clearer direction in certain areas. In the United States, the inherent trade-offs and potential for great conflicts of the Colorado system of water allocation – with all users in competition – illustrates the *objective gap*. Municipal water providers spend resources on water supply projects that rely upon the same water or build parallel pipelines. All water supply projects must go through lengthy, adversarial processes to receive permits. In most drainages and even some basins, municipal, industrial, environmental and agricultural needs are met depending on which user has pre-existing rights or has the most financial and political resources. One less than optimal result is that in a drought, for example, one town may have a full water supply and a neighbouring community little or nothing. With only scant quantification of environmental water needs and a lack of a comprehensive vision, the task of co-ordinating water policies with a view to protecting the environment can quickly become resource intensive.

A specific focus on the policy gap

Two-thirds of OECD countries surveyed face a *policy gap* because of the high impact of the over-fragmentation of roles and responsibilities on water policy implementation at the territorial level. For example, in the United States, where there is no single agency in charge of water policy, the intervention of 50 000 federal and state agencies, committees

and 3 000 county governments does affect water policy formulation across levels of government. Water policy coherence is therefore highly dependent on the set-up of institutions and the allocation of roles and responsibilities at central and sub-national levels. As shown in Chapter 1, most of the time, countries experience a *policy gap* because water responsibilities are scattered between different levels of government and across several ministries. These can range from the ministry of the environment, to agriculture, health, fisheries, industry, finance, transport, public works, rural development, infrastructure, housing, spatial planning, etc. These policy areas relate to different organisational cultures and have different constituencies (farmers, trade unions, voters, private companies, etc.), as well as different degrees of sensitivity to lobbies. Unless co-ordination is encouraged, this multiplicity of actors is likely to favour segmented working methods and complicate decision-making processes even further. Narrow sectoral perspectives and silo approaches then prevail, instead of cross-cutting agendas tailored to specific issues. Setting up a comprehensive “institutional map” that clearly identifies *who does what* in terms of managing water resources and services is therefore key for identifying possible overlaps or “grey areas” in water policy.

A series of indicators can explain the causes of the *policy gap* and its impact on effective co-ordination and implementation of water policy in OECD region. Such indicators are described in the following table, which also lists OECD countries, considering them as important or very important obstacles to effective co-ordination and implementation of water policies at the horizontal level.

Table 3.3. **Indicators to measure the policy gap in the water sector**
17 OECD countries surveyed

Main obstacles to horizontal co-ordination of water policies	No. of countries/ regions	Examples of countries or regions
Lack of institutional incentives for co-operation (objectives, indicators, etc.)	13	Australia, Belgium (Flanders), Greece, Israel, Italy, Korea, Mexico, the Netherlands, Portugal, Canada, United Kingdom, United States (Colorado), Spain
Problematic implementation of central government decisions at local and regional level	12	Australia, Belgium (Flanders), Chile, France, Israel, Korea, the Netherlands, New Zealand, Spain, Greece, Italy, Mexico
Overlapping, unclear, non-existing allocation of responsibilities	10	Belgium (Flanders), Canada, France, Greece, Israel, Italy, Spain, United States (Colorado), Korea
Interference of lobbies	9	Australia, Chile, Greece, Israel, Italy, New Zealand, Spain, France, United States (Colorado)
Lack of national-level political commitment and leadership in water policy	8	Belgium (Flanders), Canada, Chile, Israel, United States (Colorado), Italy, Mexico, New Zealand
Absence of strategic planning and sequencing decisions	7	Chile, Italy, Korea, Netherlands, Mexico, New Zealand, United States
Difficulties related to implementation of/adaptation to recent reforms	7	Australia, Chile, France, Portugal, Spain, Greece, Italy
Contradiction between national organisation and supranational recommendations or directives	7	Belgium (Flanders), France, Greece, Korea, Spain, United States (Colorado), United Kingdom
Competition between different ministries (political rivalries, etc.)	4	Belgium (Flanders), Israel, Portugal, Korea

Source: OECD Survey on Water Governance (2010).

More than two-thirds of OECD countries surveyed explain the remaining *policy gap* by the lack of institutional incentives for encouraging inter-institutional co-operation at horizontal level. For instance, in Canada, the federal government has issued no recent water goals or indicators towards which all ministries can work, and integrated water policy is facing obstacles. However, the 2010 *Federal Sustainable Development Strategy for Canada* also aims to

maintain water quality and availability, which will be monitored by the Canadian Environmental Sustainability Indicators to assess progress on goals and targets in this respect.

Difficulty implementing central government decisions at local and regional levels is a second obstacle to policy coherence in OECD regions. This may create tensions between ministries with conflicting interests at sub-national level and calls for a customisation of water policy at the territorial level. For example in Mexico, the programmes of the National Water Commission (CONAGUA) seek to respond to increasing water demand from the different users, especially those that have fewer water resources. But there is a general acknowledgement of the need for a co-ordination agreement or convention between state and federal governments to encourage decentralisation of hydrological programmes. No real co-ordination exists at central government level to match up the actions of public agencies and demands from civil society, especially in terms of water resources and environmental protection. A lack of dialogue at national level as well as a lack of consensus on water tariffs (metering, full-cost recovery, etc.) and strong political commitment at all levels, make it a challenge to design sustainable and financially viable water policies. The Mexican 2030 Water Agenda launched in 2011 in Mexico is a starting point to meet these challenges.

Other factors contributing to the *policy gap* include overlapping, unclear or non-existent allocation of responsibilities; interference from lobbies; a lack of political commitment and leadership in water policy; an absence of strategic planning and failure to sequence decisions; difficulties in adapting to recent reforms, and conflicts between recommendations at the national and supranational level (e.g. the European Union *Water Framework Directive*). In the Netherlands, water management is becoming more complex because of the interdependence of such issues as climate change action, space needed for water, density of buildings in spatial planning and enhancement of water quality. The objectives proposed by different ministries and agencies involved sometimes clearly conflict. The ongoing adaptation strategy on water and climate requires new skills and an adequate governance system. Current silo approaches must be abandoned and regional interests and needs integrated with the constraints of the natural environment, in a holistic approach to water policy. In Italy, the major obstacle to policy coherence is confusion and regulatory uncertainty in allocating roles and responsibilities at national level, as well as a lack of political commitment both at central and local level. Because there are no effective rules of competition for the management of water services, delays occur in the implementation of national and community legislation at municipal level. In Chile, the absence of strategic planning and a common frame of reference for water policy, especially in terms of property rights, is problematic and requires permanent consensus across ministries and agencies.

Box 3.2. Obstacles to coherence between water and other policy areas in OECD countries

The overall ranking of obstacles to water policy coherence and implementation at central government level varies according to the policy areas considered.

The major challenge for integrating water and regional development policies lies in the difficulty of implementing central government decisions at local and regional level and the lack of institutional incentives for co-operation. This is explained by the fact that design and implementation of regional policies relies heavily on sub-national governments. As regional policies cover many cross-cutting issues, the degree of implementation at the

Box 3.2. Obstacles to coherence between water and other policy areas in OECD countries (cont.)

territorial level may raise tensions between the central administrations involved, depending on their constituencies on the ground. Besides, overlapping, unclear and non-existent allocation of responsibilities is more problematic when it comes to co-ordinating water and regional development policies than for the energy and agricultural sectors, for several reasons. First, OECD countries have generally set up more co-ordination mechanisms between water, energy and agricultural policies than in the areas of regional development and spatial planning. Second, water and energy policies are frequently led within an environment ministry and water resources management are often handled, at least in part, within a ministry of agriculture. The allocation of responsibilities across ministries and public agencies is thus less confusing with respect to the relationship between water, agriculture and energy policies than to regional development policies.

As for the water-energy nexus, the key obstacles are generally related to poor fit in the policy-making hierarchy. For example, in the United States, energy policies are usually designed and implemented in a top-down approach, by powerful federal agencies such as the Department of Energy, which set standards. Decisions related to water policies, however, are usually driven by sub-national governments, in a bottom-up approach, because water management is mainly a state issue. In addition, other obstacles arise that are related to inadequate collaboration between energy and water supply entities. Separate funding, oversight and regulatory mechanisms for energy and water, and the lack of consistency in the data used to formulate, design and implement policies are also problematic.

As far as co-ordination between water and agriculture policies is concerned, the interference of lobbies is the primary obstacle noted by the OECD respondents. Indeed, if a ministry of agriculture is in charge of formulating water policy, conflicts of interests can be generated because of the ministry's natural tendency to act as an advocate for farm interests, irrigation being the largest water consumer. The absence of common information and a common frame of reference for policy makers and a lack of political commitment and leadership in water policy are also cited as key concerns for water and agriculture policy coherence.

Source: OECD Survey on Water Governance (2010).

Institutional fragmentation: An application of the Multi-level Governance Framework in selected OECD metropolitan regions

The increasing multiplicity of local actors in water policy making, both through the creation of metropolitan-wide governance mechanisms and through the involvement of grassroots organisations, further complicates metropolitan water governance. Although it takes different forms in different contexts, metropolitan governance reform often entails the creation of metropolitan-wide institutions, such as those that manage transportation and water supply. On the other hand, the bottom-up approach advocated by proponents of delegated water management can potentially both be complementary and also conflict with the drive for metropolitan co-ordination inherent in governance reform. This raises two issues for urban water governance: i) re-scaling metropolitan governance may (positively or negatively) affect water governance frameworks; and ii) strategies for metropolitan governance reform may offer interesting models for application in the urban water sector. Evidence from selected OECD metropolitan areas is provided in Table 3.4.

Table 3.4. Evidence from selected OECD metropolitan areas

Institutional setting of the metropolitan region		Main metropolitan governance challenges
Busan	The local labour market is more or less represented by the Busan Metropolitan City (the higher level of local government in Korea) and includes 16 lower levels of local governments (15 autonomous districts and one rural unit). The largest functional area, often referred to as the Southeast Region, extends to the Gyeongnam province and Ulsan Metropolitan City.	The need to build better co-operation with Ulsan and Gyeongnam (policy gap) to design a comprehensive competitiveness strategy based on the complementary assets of the largest Southeast Region; management of spill-over problems (e.g. urban sprawl and environmental concerns) due to the administrative gap; enhancing local capacity to design and implement strategic decisions (decentralisation is quite recent); increasing local democracy (especially at the lower level of local governments), and promoting a culture of citizen participation to bridge capacity, information and accountability gaps.
Helsinki	The functional urban region includes four municipalities that form the core of Helsinki metropolitan area and eight surrounding municipalities.	Dealing with urban sprawl and risk of further spatial polarisation and disparities; increasing co-operation among planning authorities of regional councils and municipalities especially for land use and housing. Further integration of the Greater Helsinki area requires making major investments in infrastructure and housing (Helsinki is a relatively small city from an international and EU perspective).
Istanbul	The functional area is mainly represented by the Istanbul metropolitan municipality, which includes 72 district municipalities and extends to two other surrounding provinces (Kocaeli and Yalova).	Managing major transport congestion; providing better co-ordination of strategic planning at a wider regional level and better implementation and enforcement in the planning process; formulating a long-term strategic vision; improving delivery of local public services; improving decentralisation management at the district municipality level; strengthening local capacity-building.
Madrid	The functional labour market is slightly larger than the <i>Comunidad Autónoma de Madrid</i> (Spain's regional governments are known as an "autonomous communities"), which is composed of 179 municipalities (including the city of Madrid, which represents 54% of the total population).	Solving the problem of overlapping responsibilities and competition between the <i>Comunidad</i> and the city of Madrid (e.g. in economic development and plans for internationalisation).
Milan	The restricted definition of the functional labour market roughly corresponds with the province of Milan, which includes 189 municipalities including the city of Milan. The extended definition of the functional area includes the province of Milan and seven other provinces.	Enhancing co-operation to manage sectoral bottlenecks throughout the functional area (e.g. transportation and congestion, housing); building an integrated governance framework capable of producing public goods.
Montreal	The functional labour market includes 82 municipalities (the largest being Montreal, Laval and Longueuil) and is represented by a metropolitan agency (CMM); the area is also split into three parts, each belonging to different administrative provincial regions that extend well beyond the current functional area.	Stabilisation and consolidation of institutional reforms in the region; dealing with de-merger issues; implementation of decentralisation at the district level; legitimising the new metropolitan community and bolstering its finances; deterioration of municipal infrastructure is straining local finances.
Randstad	The polycentric Randstad region area includes most of the South Holland and Utrecht provinces, the southern part of the province of North Holland and the municipality of Almere in the province of Flevoland. At 6.6 million people, it covers the four largest Dutch cities (Amsterdam, Rotterdam, The Hague and Utrecht), a large number of medium-sized cities, as well as small towns and villages. The highest functional integration occurs at sub-Randstad levels: that is, city-region levels (Amsterdam, Rotterdam, The Hague and Utrecht) and wings' levels (North wings and South wings).	Congestion and bottlenecks in transportation, notably in relation to the two main ports (Schiphol airport and Rotterdam harbour) requires more co-ordination at a wider regional level; more formal co-operation at the Randstad level is needed to pursue the integration process; existing co-operation at the city-regions level is hampered by a lack of authority to implement (each municipality that is part of these co-operative arrangements can block the decisions); providing a better co-ordination process to manage existing environmental concerns, notably in relation to the "green heart" and water management (most of the area is below sea level), for example through improved co-ordination and rationalisation of water boards within the Randstad.
Seoul	The functional area is referred to as the Capital region, which includes Seoul Metropolitan City (around half of the total population in the functional area), Incheon Metropolitan City and the Gyeonggi Province. Seoul Metropolitan City includes 25 districts (lower levels of government) with an average of 400 000 inhabitants.	Building formal co-ordination between the three local governments (Seoul, Incheon, Gyeonggi) to deal with a high concentration of population and industry, congestion and environmental problems, etc.; integrating sectoral co-ordination of local policies (spatial planning, land use management, transport and environment, economic development strategy) into a broader and strategy for competitiveness and sustainable development.
Stockholm	The local labour market includes two counties (Stockholm County and Uppsala County) and 36 municipalities in total. A larger expanded metropolitan area, the Stockholm Mälars region, includes five counties and 65 municipalities.	Strong local autonomy and weak intermediate level (counties) do not allow for co-ordination of strategic planning decisions for transportation and economic development at the metropolitan level.

Source: OECD (2006), based on OECD Metropolitan Reviews.

Conclusion

The degree to which effective co-ordination and implementation of integrated water policy may be hindered by multi-level governance gaps varies widely in OECD regions, but common challenges have been identified. The primary obstacle pointed out by two-thirds of OECD countries surveyed is the *funding gap*, manifested both in unstable and insufficient revenues of sub-national actors and a mismatch between ministerial funding and administrative responsibilities at central government level. A second multi-level governance challenge noted is the *capacity gap*, due to the impact of insufficient knowledge and infrastructure on vertical co-ordination of water policy. Almost all OECD countries face a *policy gap* because of the over-fragmentation of roles and responsibilities at central government and sub-national level. Lastly, the *administrative gap* is still a concern for half of OECD countries, EU and non-EU members alike, as well as the *information gap* and the *accountability gap*, which also prevent the acceptance of water policy reform towards more integration. The “profiles” attached to this report provide in-depth analysis of multi-level governance challenges in water policy of 17 OECD countries.

Understanding multi-level governance challenges in water policy requires a holistic approach to co-ordination gaps because of the fact that they are interrelated and can exacerbate each other. For instance, any country facing a sectoral fragmentation of water roles and responsibilities across ministries and public agencies (*policy gap*) may also suffer from the conflicting goals of these public actors (*objective gap*). Because of silo approaches, policy makers may not willingly share information (*information gap*). This in turn undermines capacity-building at the sub-national level (*capacity gap*) because local actors, users and private actors have to multiply their efforts to identify the right interlocutor in the central administration. Hence the need to identify the mutual interdependencies between different institutions involved in water policy making at local, regional and central levels. This implies recognising the impediments to effective co-ordination of public actors at the levels of administrative, funding, knowledge, infrastructural and policy levels, to address water information and data “gaps” and promote shared strategies for more effective water policies.

Notes

1. For detailed information on the questions asked in the survey, please refer to the methodological note in Box 2.1.
2. For more information on the “policy gap” see OECD 2011a, *Policy Coherence Between Water, Energy and Agriculture* (ENV/EPOC/WPBWE (2011)6, OECD Publishing, Paris).
3. For further information and analysis on the 3Ts, see OECD (2009), *Managing Water for All*, OECD Publishing, Paris.
4. The 2009 OECD Review, regarding water quality and wastewater, explains why Greece has experienced severe delays in implementing the EU Urban Wastewater Directive and wastewater management. The report highly recommends improvement of the wastewater management, in compliance with the EU *Urban Waste Water Directive*, reduction of water pollution by dangerous substances and illegal discharges of wastewater, as well as better allocation, to make sure water flows to uses with the highest value.
5. For more information, see Chapter 3 and recommendations from OECD *Workshop on Improving the Information Base to Better Guide Water Resource Management Decision Making*, Zaragoza, Spain, 4-7 May, 2010, www.oecd.org/water/workshop2010.

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Chapter 4

Multi-level Co-ordination of Water Policies

This chapter aims to identify policy instruments used by governments to bridge multi-level governance gaps considered to be bottlenecks in the co-ordination and implementation of water policy. It shows the variety of practices adopted by OECD countries for multi-level co-ordination of water policies and capacity-building at sub-national level. The chapter gives an overview of governance mechanisms currently used by OECD countries to bridge previously identified gaps (Chapter 3). A specific focus is then made on a series of instruments fostering horizontal co-ordination across ministries, horizontal co-ordination across local actors and vertical co-ordination between levels of government.

Introduction

Encouraging co-ordination and capacity-building is a critical step toward bridging multi-level governance gaps in water policy. Meeting water governance challenges calls for a mix of well-integrated policy measures. This can be difficult to achieve in a context of fragmented responsibilities among various public actors as decisions are made at different territorial levels (international, national, regional, municipal, basin, etc.). Greater policy coherence is called for, both horizontally and vertically, among different institutions. This does not mean uniformity, but an attempt to create synergies between customised approaches, and it requires mutually reinforcing actions across government, departments and agencies for achieving the agreed-upon policy objectives, defining long-term strategies and adapting them to different contexts. Effective governance demands better institutional co-ordination, because competitive co-operation (e.g. markets, tenders) can also encourage co-ordination. Transparency, flexibility, rapid adaptation to a changing environment, early warning of any incoherence and mechanisms for dialogue and solving disputes among different communities are all crucial ways of achieving integrated policy.

To cope with multi-level governance challenges, OECD countries have adopted several co-ordination mechanisms, which are discussed in the following sections. Measuring the degree of performance of such governance tools or assessing their impact on the efficiency, equity and sustainability of water policy would require more in-depth and specific work at national, sub-national and basin levels. But by reviewing current governments' responses to previously identified challenges, this chapter provides the preliminary arguments for confronting tools and gaps. Further OECD work will be considered at a later stage in order to start the discussion on the efficiency of these respective governance instruments and the extent to which they contribute to bridging the gaps.

Governance instruments for managing mutual dependencies in the water sector

Existing governance tools for co-ordinating water policy in OECD countries

Table 4.1 provides an overview of existing water policy co-ordination and capacity-building tools in OECD countries, ranging from “hard” (legal arrangements, contracts, etc.) to “soft” mechanisms (voluntary industry agreements, stakeholders' information measures, consultations, etc.) and formal to informal ones. A more detailed view of their objectives, use and references in the different countries is available in the country profiles attached to this report.

Tools for improving water governance: Main trends and features in OECD countries

There are several options for co-ordinating water policies – including within a given country – and incentives for adopting them proceed from a variety of parameters. Co-ordination instruments across ministries, between levels of government and across local actors are more or less binding, more or less formal and more or less flexible. Most of

Table 4.1. **Governance instruments for co-ordinating water policies at horizontal and vertical levels**

Horizontal co-ordination tools		
Gap(s) targeted	Tool	Examples of countries and regions
Information gap Objective gap Policy gap	Multisectoral conferences between central government actors and between sub-national players	Australia, Canada, Chile, France, Italy, Mexico, Netherlands, Spain, United States (Colorado)
	Co-ordination group of experts	Belgium (Flanders), France, Mexico, Netherlands, United Kingdom
	Inter-agency programmes	France, Mexico, Netherlands, New Zealand
	Inter-ministerial body or commission	Australia, Belgium (Flanders), Belgium (Wallonia), Chile, France, Greece, Israel, Italy, Japan, Mexico, Netherlands, New Zealand, Spain, United States (Colorado)
	<i>Ad hoc</i> high-level structure	Australia, Canada, Chile, France, Greece, Italy, Mexico, New Zealand, Portugal, Spain
	Central agency	Belgium (Flanders), Chile, France, Greece, Israel, Italy, Mexico, Portugal, United Kingdom, United States (Colorado)
	Line ministry with specific water prerogatives	Australia, Belgium (Flanders), Chile, France, Israel, Italy, Mexico, New Zealand, Portugal, Spain, United Kingdom
	Ministry of water (exclusively)	None of the countries surveyed
Vertical co-ordination tools		
Gap(s) targeted	Tool	Examples of countries and regions
Administrative gap Capacity gap Funding gap Information gap Objective gap Policy gap	Water agency or river basin organisation	Australia, Belgium, France, Italy, Mexico, Portugal, Netherlands, Spain, United States (Colorado)
Accountability gap Funding gap Objective gap Policy gap	Regulations for sharing roles between levels of government	All countries surveyed
Accountability gap Information gap Objective gap Policy gap	Co-ordination agency or commission	Australia, Belgium, Canada, France, Italy, Korea, Mexico, Netherlands, New Zealand, Spain
Accountability gap Capacity gap Funding gap Information gap Objective gap Policy gap	Contractual arrangements	Australia, Canada, Chile, France, Italy, Mexico, Netherlands, Spain, United Kingdom, United States (Colorado)
Accountability gap Capacity gap Funding gap Information gap	Financial transfers/funds	Australia, Belgium (Flanders), Canada, Chile, France, Italy, Korea, Japan, Mexico, Netherlands, Portugal, Spain, United States (Colorado) <i>All countries surveyed except New Zealand and United Kingdom</i>
Accountability gap Capacity gap Funding gap Information gap	Performance indicators and experimentation at the territorial level	Australia, Canada, France, Italy, Korea, Mexico, Netherlands, New Zealand, Portugal, Spain
Information gap Capacity gap Objective gap Policy gap	Shared databases and water information systems	Australia, Canada, France, Japan, Korea, Mexico, Netherlands, New Zealand, Portugal, Spain
Administrative gap Capacity gap Funding gap Information gap Objective gap	Intermunicipal co-operation or specific bodies	Australia, Belgium (Flanders), France, Greece, Italy, Japan, Korea, Mexico, New Zealand, Portugal, United States (Colorado), Spain

Table 4.1. **Governance instruments for co-ordinating water policies at horizontal and vertical levels (cont.)**

Vertical co-ordination tools		
Gap(s) targeted	Tool	Examples of countries and regions
Accountability gap Administrative gap Capacity gap Funding gap Information gap Objective gap Policy gap	Citizen engagement	Belgium (Wallonia), Chile, France, Greece, Japan, Korea, Mexico, Netherlands, New Zealand, Portugal, Spain, United Kingdom, United States (Colorado) <i>No participation in policy making: Italy and New Zealand</i>
Capacity gap Funding gap Information gap	Private sector participation	All OECD countries surveyed

Notes: Targeted gaps are classified in alphabetical order. See country profiles in the Annex for more details on each mechanism.

them aim to create a framework for combining tools, funds and organisations or establishing a multi-stakeholder platform for dialogue for integrated water policy at all levels. Their creation relies on several factors, ranging from scarcity concerns, which is usually a driver for effective water management, to institutional mismatch or equity and efficiency objectives, even in developed and water-rich states.

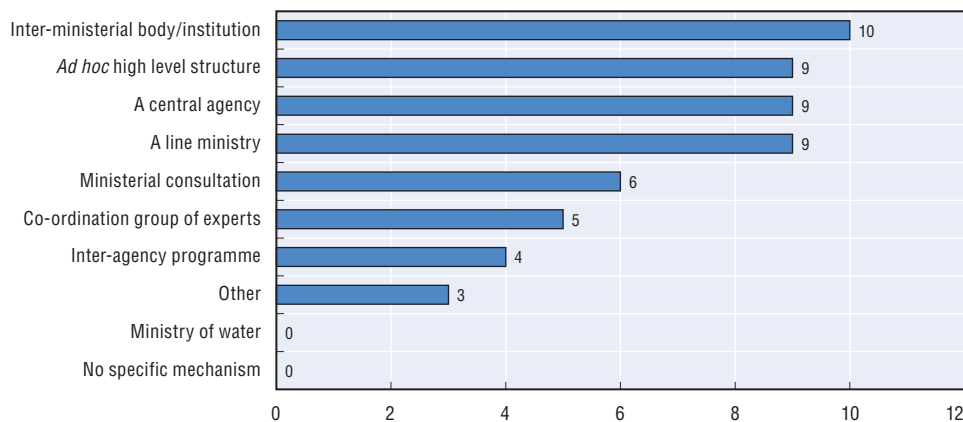
Each co-ordination mechanism can help bridge different gaps, and each specific gap may require the combination of several tools. All OECD countries surveyed have set up some co-ordination mechanisms at horizontal level, but countries where sub-national actors play merely an “implementational” role in water policy (Chile, Korea, Israel) have not necessarily adopted vertical co-ordination mechanisms. The following section offers closer scrutiny of a selection of tools, showing examples of countries and regions using them. However, the interaction between different governance instruments, as well as their performance in terms of co-ordination and capacity-building, can only be assessed holistically, within the framework of a policy dialogue and more in-depth approach at different territorial levels.

Institutional mechanisms for upper horizontal co-ordination of water policy

Central governments willing to move away from a sectoral approach to water policies face the issue of how to organise their action to embrace an integrated perspective. The distribution of water responsibilities among several national administrative bodies often results in a fragmentation of these functions and frequent conflicts in decision-making processes and resources distribution. A concerted effort is needed to encourage the various institutional and managerial systems that formulate and implement water policy to work together. Consistency is also needed to ensure that individual policies are not contradictory, and that they converge in a coherent strategy. This demands a strong political will to overcome silo tendencies, and to stimulate and co-ordinate formal agreements within the public administration.

All OECD countries surveyed have co-ordination mechanisms at central government level, but no OECD country has created a ministry *specifically* and *exclusively* dedicated to water. The water sector therefore differs from other policy areas such as health and energy, where there is frequently a specific ministry to ensure central co-ordination. Given the externalities of water on other policy areas, a totally clear-cut responsibility for water devoted exclusively to a “single actor” at central government level does not appear to be a panacea for co-ordinating water policy. Some countries, such as the Netherlands, have

Figure 4.1. **Existing co-ordination mechanisms at central government level**
17 OECD countries surveyed



Source: OECD Survey on Water Governance (2010).

ministries that explicitly include “water” in their designations, but also embrace other policy areas such as rural affairs or agriculture. Inter-ministerial bodies, committees and commissions are the main governance tools used in upper horizontal co-ordination of water policy. More than half of OECD countries surveyed have created these platforms for dialogue and action between public actors in charge of water policy at the central government level. France, Belgium and Chile provide interesting examples.

- In France for example, there is an “Inter-ministerial mission on water” under the leadership of the Ministry for Environment, Ecology, Energy, Sustainable Development and Maritime Affairs and, more specifically, the Water and Biodiversity Department. This administrative commission was created in 1968 in response to the water law of 1964, and brings together all ministries concerned by water policies, under the authority of the prime minister. It is responsible for advising the government on any legislative project related to water resources. Its prerogatives on interministerial co-ordination, water management and administration were defined in 1987.
- In Belgium, despite the strong regional characteristics of water policy, the co-ordination of the environmental policy is institutionally carried out by the Co-ordination Committee for International Environmental Policy (CCIEP). This consultative body was established in 1995 between the federal state and the three regions, and constitutes a legally binding co-operation agreement. The secretary and presidency of the CCIEP is being acted by the federal state and several technical working groups responsible for the co-ordination of specific environmental issues. Within this framework, the Inter-Ministerial Conference for the Environment (CCIM) Steering Group Water (presided over by the Flemish Environment Agency) is the consultative body in charge of the necessary co-ordination of the implementation of international water policy between the different Belgian authorities responsible.
- Finally, in 2009, Chile set up an interministerial committee on water policies to co-ordinate actions between departments and agencies involved in national water strategy. It also advises on strategic planning of water policy in the long term, makes proposals for institutional mechanisms, incentives and guarantees towards the implementation of water policies in rural and urban areas, and adopts the necessary agreements for the implementation of the national integrated water strategy. The

committee is led and co-ordinated by the Ministry of Public Works, and has representatives from the General Secretary of the Presidency, the Ministry of Economy, the Ministry of Agriculture, the Ministry of Mining and the National Energy Commission, as well as the National Environment Commission.

Formal co-ordinating bodies, such as *ad hoc* high-level structures and a central agency, are also frequently used by governments for horizontal co-ordination of water policy. These are often government agencies or specific government offices that help promote co-operation and collaboration. They are a key force for building capacity and sharing good practices, as well as overcoming sectoral fragmentation of water-related tasks across ministries. They act as a forum for aligning interests and timing across ministries and public agencies. A prominent example among OECD countries is Australia.

Box 4.1. High-level central co-ordination agency: COAG in Australia

The Council of Australian Governments (COAG), created in 2007, is the peak intergovernmental forum and is composed of the prime minister, the state premiers, territory chief ministers and the president of the Australian Local Government Association.

The role of COAG is to initiate, develop and monitor the implementation of policy reforms of national significance and that require co-operative action by Australian governments. COAG meets on an as-needed basis.

Where formal agreements are reached, these may be embodied in intergovernmental agreements. Water policy in the Australian government is now more co-ordinated thanks to the COAG, which gathers government officials from a number of different administrations to form what is known as the “water group” in the Department of the Environment, Water, Heritage and the Arts.

Prior to this amalgamation, water policy staff in the Australian government were scattered between the Department of the Prime Minister and Cabinet, the National Water Commission, the Department of Agriculture, Fisheries and Forestry and the Department of Environment and Heritage.

The line ministry that has a specific responsibility for water is often the main instrument adopted for ensuring interdepartmental and interministerial co-ordination. More than half of OECD countries surveyed have line ministries responsible for stimulating and co-ordinating formal horizontal partnerships. In most cases, these have wide responsibilities over a broader set of areas than water policy. Positive implications in the concentration of different water-related responsibilities within the same line ministry include a more open, coherent view for water policies, the concentration of technical and administrative skills and the possibility for a more integrated programming approach. Examples of line ministries in water policy making can be classified into three main categories: a first category where water policies are encompassed within broader environmental issues; a second category where water policies are included with infrastructure and public works, and a third category where water policies are grouped with environmental challenges and specific rural concerns. This categorisation does not necessarily imply that the allocation of water responsibilities will generate a specific “sectoral” dominant of water policy, though the assumption can be made. Providing an adequate response to the needs of water policy therefore requires an association of the *how* (which ministry? which sector? which policy area) to the *what* (what price? what regulation?).

Box 4.2. Examples of *ad hoc* high-level structures and central agencies co-ordinating water policy in OECD countries

In Israel, the Water Authority Council created in 2007 is responsible for all decision-making and policy-setting by the Israeli Water Authority. It seeks to co-ordinate the actions of ministries of Environmental Protection, Health, Finance, Foreign Affairs, and Infrastructure, which used to be collectively responsible for the decision-making process over matters concerning water and sewage. Under the previous arrangement, important decisions were often stale-mated by diverging interests of each agency/ministry and a lack of incentives for compromise, which presented the risk of absence of collective sense of responsibility for national decision-making on water and wastewater management. The Water Authority Council was established to alleviate these frequent deadlocks. All policies and plans that the Israeli Water Authority or any other Ministry proposes must be presented to the Water Authority Council Forum for approval before they can be passed. The efficiency of the Water Authority Council is contingent upon two criteria – creating equal representation of all interested groups, and ensuring that effective and timely decision-making is their priority. This unifies the responsibility for decision-making on national water and wastewater management and has substantially improved the efficiency and timing of decision-making.

In Mexico, the role of CONAGUA, the National Water Commission, is to manage and preserve national waters and their inherent goods in order to achieve sustainable use, with joint responsibility of the three tiers of government (federal, state, and municipal), thus requiring co-ordination initiatives. This decentralised agency of the Ministry of Environment and Natural Resources (SEMARNAT) is the highest institution for water resource management in Mexico, including water policy, water rights, planning, irrigation and drainage development, water supply and sanitation, and emergency and disaster management (with an emphasis on flooding). CONAGUA enjoys considerable *de facto* autonomy, employs 17 000 professionals and has 13 regional offices and 32 state offices. The 2004 amended National Water Law (NWL) restructured CONAGUA key functions through the transfer of responsibilities from the central level to sub-national entities. These are playing an increasing role in the water sector, limiting CONAGUA's role to the administration of the NWL, the co-ordination of water policies, the conduct of national water policy, and planning, supervision, support and regulatory activities. The Technical Council of CONAGUA is an interministerial body in charge of approving and evaluating CONAGUA programmes, projects, budget and operations, as well as co-ordinating water policies across departments and public administration agencies. It is composed of the highest representatives from SEMARNAT, the Ministry for Social Development (SEDESOL), the Ministry of Agriculture, Rural Development, Fisheries and Food (SAGARPA), the Ministry of Treasury and Public Credit (SHCP), the Ministry of Energy (SENER), the Ministry of Public Administration (SFP), the National Commission of Forestry (CONAFOR) and the Mexican Institute of Water Technologies (IMTA).

Several OECD countries have a National Water Council. In Greece, this council gathers representatives from 26 organisations, including the seven ministries related to water, political parties, NGOs and other stakeholders. In Portugal, the council represents 50 government and non-government stakeholders and has a useful role. In Spain, this high-level consultative agency was created in 2009 and includes autonomous communities, local entities, river-basin authorities, and professional and economic unions related to water. Horizontal co-ordination of water policies is ensured by the participation of the main directors-general of the Ministry of Environment, Rural and Maritime affairs (water, quality and environmental protection, sustainable development and rural affairs,

Box 4.2. Examples of *ad hoc* high-level structures and central agencies co-ordinating water policy in OECD countries (cont.)

natural and forestry areas, coastal and marine), the presidents of all river basin authorities, as well as the directors from other ministries such as civil protection and emergencies (Ministry of Interior), energy policy (Ministry of Industry, Tourism and Trade), public health (Ministry of Health and Social Policy), economic policy (Ministry of Economy and Treasury) and the directors of the Geological and Mining Institute of Spain (IGME) and the Center for Studies and Experimentation of Public Works (CEDEX).

Table 4.2. Categories of line ministries with a specialisation in water policy in OECD countries

Categories of line ministries	Example of countries or regions
Water policy with broader environmental issues	• Australia: Department of the Environment, Water, Heritage and the Arts • France: Ministry for Environment, Ecology, Energy, Sustainable Development and Maritime Affairs • Greece: Ministry of Environment, Energy and Climate Change • Italy: Ministry of Environment, Land and Sea • New Zealand: Ministry for the Environment • Mexico: Ministry of Environment and Natural Resources • Portugal: Ministry for the Environment and Spatial Planning.
Water policy with infrastructure and public works	• Chile: Ministry of Public Works • Netherlands: Ministry of Transports, Public Works and Water Management • Israel: Ministry of National Infrastructure
Water policy with rural affairs	• Spain: Ministry of Environment, Rural and Maritime Affairs • United Kingdom: Department for the Environment, Food and Rural Affairs

Source: OECD Survey on Water Governance (2010).

Co-ordination groups of experts are also widespread in OECD countries, especially in European Union countries. The EU *Water Framework Directive* has initiated co-ordination across ministries to achieve a common implementation strategy by the adoption of new governance arrangements, including the creation of co-ordination groups of experts. Regular meetings between representatives from different ministries and agencies provide an opportunity for communication and dialogue, and help build networks that are horizontal, vertical and cross-disciplinary. Among those responsible for the operational aspect of water implementation, a common understanding often exists of the need for operational collaboration and co-operation. In addition to the formal channels, it is not uncommon that informal channels of communication are used. At first glance, it may seem that such a mechanism is most appropriate for smaller countries, where there is greater likelihood that individual members of government, regardless of their level, know each other personally. But even though size may facilitate *ad hoc* gatherings, this mechanism appears to be valuable regardless of a country's geographic size or its population level.

Inter-agency programmes are also a means to foster co-ordinated water strategic planning at central government level. Some OECD countries have designed their national water plans or programmes jointly between several ministries and public agencies. Often interagency programmes have been used as a support for this collective task of setting strategic planning in water policy making.

Box 4.3. Examples of co-ordination groups of experts in the European Union

In the United Kingdom, a Technical Advisory Group (UK TAG) was created to provide guidance on the technical implementation of the EU *Water Framework Directive* (WFD).

In Spain, no less than nine working groups have been set up for the implementation of the WFD regarding water information systems and reporting, extreme events, climate change, biological indicators, water quality and groundwater, among other topics.

In Belgium, several commissions were created to ensure transnational co-ordination for the international river basin districts of Scheldt and the Meuse in accordance with the WFD. Besides, the co-ordination Committee on Integrated Water Policy (CIW) is the competent authority for the WFD and the co-ordination of integrated water policy in Flanders. It is composed of the leading officials of all administrative entities involved in water management and of the representatives of the authorities of the water management at the local level. It has a threefold mission: i) to prepare, plan and follow up the integrated water policy; ii) to guarantee a uniform approach of integrated water policy in the sub-basins; and iii) to implement the decisions of Flemish government related to integrated water policy. As part of the implementation of the WFD, the committee prepares the river basin management plans for the two river basin management districts in Flanders, the Scheldt and the Meuse.

Box 4.4. Co-ordinating strategic planning of water policy: OECD examples

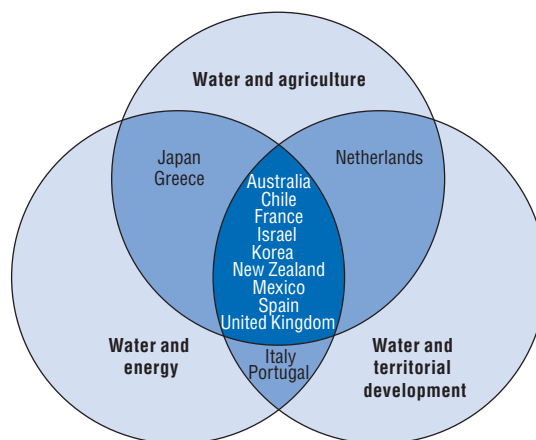
In the Netherlands, under the European Financial Tool for the Environment (LIFE), which ran from 1992 to 2006, the research programme *Living with Water* resulted in 49 Dutch water initiatives to provide innovative and sustainable solutions for current environmental issues. Some of these projects included co-operation between different universities, to enhance a multidisciplinary approach to water governance (e.g. spatial planning, economics, law, policy science, public administration). Others aimed to improve the innovation of the governance of water policies of water boards, provinces, ministries and agencies. Currently, water boards, the Ministry of Transport, Public Works and Water Management, universities, engineering companies have developed a Water Governance Centre, an institution to encourage research, application and dissemination of knowledge on water governance.

Another significant example is New Zealand. The *New Start for Fresh Water Programme*, launched in 2009, announced the government's strategy and new direction for water management: i) ensuring water contributes to economic growth and environmental integrity; ii) providing stronger leadership and national direction; and iii) investigating whether water management decisions are made at the right level. The programme also aims to fill science, technical, information and capability gaps; develop management measures to set limits to manage quality and quantity issues; address the impacts of land use intensification on water quality, and improve the management of water demand. The Land and Water Forum plays a key role in achieving these objectives. It represents a wider grouping of stakeholders, including agricultural, industrial, urban and environmental organisations with interests in water management. The aim is to conduct a collaborative governance process led by stakeholders, to recommend reform of New Zealand's fresh water management. The Forum leads a consensus process to identify shared outcomes and goals for fresh water, as well as relevant policies to achieve them. Finally, the *New Start for Fresh Water Programme* also relies on the Natural Resources Sector Network, whose primary purpose is to ensure that, across government agencies, a strategic, integrated and aligned

Box 4.4. Co-ordinating strategic planning of water policy: OECD examples (cont.)

approach is taken to natural resources development and management. This requires collective and “whole system” thinking. The sector network will provide high-quality advice to government and effective implementation and execution of major government policies.

Figure 4.2. **Horizontal co-ordination across policy areas**



Source: OECD Survey on Water Governance (2010).

Box 4.5. OECD examples of co-ordination between water, spatial planning and regional development policies

In some countries, these efforts are conducted at a high political level. In Australia, the department responsible for regional development policy is a member of the Water Co-ordination Group, the central government's primary vehicle for co-ordination on water issues. Another example is Italy, which set up a *National Strategic Framework* (NSF) within which the Ministry for the Environment, Land and Sea collaborates with regions to set targets for the quality of integrated water services. In Mexico, CONAGUA and other federal institutions are a strong support for the *Desarrollos Urbanos Integrales Sustentables* (DUIS), whose goal is the building of cities with basic services that do not damage the environment and quality of life. There are also inter-institutional agreements between governmental actors involved in infrastructure management. They aim to co-ordinate human resources, financial, technical and material means when designing and implementing studies and projects in municipalities with a low development index. Finally, in Korea, the government is building new cities with waterfronts and is restoring riversides and rehabilitating urban rivers according to eco-friendly principles.

Joint actions of ministries/agencies at sub-national level are common in OECD countries. In France, any territorial development scheme or programme [e.g. local urban plans, *Plans Locaux d'Urbanisme* (PLU) or *Schémas de Cohérence Territoriale* (SCOT)] have to be compatible with the *Schémas directeurs d'aménagement et de gestion des eaux* (SDAGE). This is also true in Portugal, where Basin Management Plans and the National Water Plan must be compatible and co-ordinated with other spatial planning instruments. In France, basin committees, which bring together various stakeholders, play a key role in the integration of environmental and economic policies and more specifically between water, spatial planning and regional development policies. In the framework of the EU WFD, basin committees have designed scenarios to 2015 on the basis of current territorial development

Box 4.5. OECD examples of co-ordination between water, spatial planning and regional development policies (cont.)

schemes and decisions. In the case of Spain, the harmonisation between water and urban planning is also ensured through river basin authorities (deconcentrated bodies of line ministries in regions), which regularly provide information on territorial development, fisheries, irrigation, infrastructure and other areas affecting the allocation of water. In Chile, regional governments and the Directorate General for Water hold regional roundtables on water, as functional initiatives to organise private and public involvement in water policy at the territorial level and support specific water resources protection programmes.

Legislations can also be a tool for co-ordinating water policies at horizontal level. In Israel, co-ordination of water and spatial planning authorities is mainly guaranteed by law. The Water Authority carries the national responsibility of quantifying the current quality and quantity of all natural water resources in the country, evaluating how these should be used or conserved, how they should be allocated to each sector, and what additional water resources are required. These evaluations are provided for each current year. Long-term forecasts of all of these elements are provided in Master Plan reports, which are submitted at several-year intervals. These Master Plans provide essential forecasts and a vision for long-term management, according to spatial planning projections. Another example is the Netherlands, where water and spatial planning is addressed in the Water Law, and the *Room for the River* programme is an initiative run by the National Water Consultation Committee (NBO).

In some countries, the co-ordination of water and spatial planning policies relies both on government agencies and legislative settings. In the United Kingdom for example, the Department for Environment, Food, and Rural Affairs (DEFRA) has responsibility for the management of water resources and water quality policies, and works with the Department for Communities and Local Government (CLG) on links with development planning. One example is the development of regulations relating to the water efficiency of fixtures and fittings in new homes. Wider areas of responsibility, such as planning powers and policy, are also devolved to DEFRA. Finally, the Floods and Water Management Act (2010) closely links development planning with the delivery of effective flood risk and water quality management at national, regional and local scales. A *National Flood and Coastal Erosion Risk Management Strategy* is being produced by the Environment Agency to inform the production of *Local Flood Risk Management Strategies* and plans by local authorities, which will also determine sustainable drainage applications for new development and roads.

Source: OECD Survey on Water Governance (2010).

Most OECD countries have engaged in efforts to co-ordinate water and other policy areas such as regional development, agriculture and energy. These efforts take different forms, ranging from political commitment at a high level to joint action of ministries and agencies at the sub-national level, sound legislative mechanisms and regular meetings of relevant stakeholders.

Improving coherence between water and other policy areas requires government-wide decision making. Quite apart from issues of international equity and commitment to the Millennium Development Goals, achieving some measure of policy coherence has increasingly become advantageous and in OECD countries' own self-interest. They, as well as developing countries, can benefit, given the interdependence of the world economy and the global markets in food and energy. Decision makers need to be well versed in the relevant policy options before they disburse public funds or adopt regulatory policies that could negatively affect water policy in developing countries.

Box 4.6. OECD examples of co-ordination between water and agriculture policies

In most countries, existing efforts to co-ordinate water and agriculture policies are carried out at the ministerial level. In Australia, the department responsible for agricultural policy is also a member of the Water Co-ordination Group. The programme *Caring for our Country* is used by the Australian government to fund environmental management of natural resources. It supports communities, farmers and other land managers to protect Australia's natural environment and sustainably produce food and fibre. The goal is to achieve an environment that is healthier, better protected, well managed, resilient and that provides essential ecosystem services in a changing climate. The programme is administered by a joint team formed from the Department of the Environment, Water, Heritage and the Arts and the Department of Agriculture, Fisheries and Forestry, and funds projects across Australia that improve biodiversity and sustainable farm practices.

In the United Kingdom, DEFRA has responsibility for policies relating to food and agriculture, and also for water resources management and water-quality policies. This also applies to the Welsh Assembly Government, which has responsibility for policies on food and agriculture in Wales as well as water resources management and water quality. In addition, *Catchment Sensitive Farming* initiatives are sponsored by DEFRA to disseminate and encourage use of good management practices in the agricultural community, with a goal of greater economic and environmental benefits (2010 Flood and Management Act).

In France, there is a *National Plan for Water Scarcity Management* with several measures directly related to agriculture, including water economies and collective quantitative water resources management. The plan is carried out by the National Water Committee under the authority of the Minister for Environment. Policies to reduce the impact on water resources of agricultural contamination are also carried out in collaboration with agencies dependent on the Ministry of Environment (ONEMA, water agencies, deconcentrated services of the ministry of environment, etc.) and the Ministry of Agriculture.

Water and agriculture institutional co-ordination is also important in New Zealand, where the Ministry for the Environment (responsible for water policy and legislation) and the Ministry of Agriculture and Forestry (responsible for agricultural policy and legislation) are both members of the Natural Resources Sector. In addition, the *New Start for Fresh Water* policy is jointly led by the Ministry for the Environment and the Ministry of Agriculture and Forestry, which enables these two departments to co-ordinate the interface between water and agricultural policies at the central government level.

An example of agency-led leadership for co-ordinating water and agriculture policies is Belgium. In the Wallonia region, the Environment administration (ex-DGRNE) and the Agriculture administration (ex-DGA) were merged into a single directorate (DGO3). This necessarily implies more synergies between environment and agricultural policies. An equivalent step was taken in Spain, when in 2008 the ex-Ministry of Environment (which had authority over water policy) and the Ministry of Agriculture, Fisheries and Food, merged to form the current Ministry of Environment, Rural and Maritime Affairs. Rural development plans integrate policies related to this field, including water, agriculture and other areas. Modernisation of irrigation schemes within the central government is the responsibility of the Directorate General for Water.

Technological means can also be used to foster co-ordination between water and agricultural policies. In Israel, recycled water for irrigation and increased water-use efficiency in the agricultural sector are two examples. One-third of the water used in the agricultural sector each year is from treated domestic (grey and black water) waste. The

Box 4.6. OECD examples of co-ordination between water and agriculture policies (cont.)

agricultural sector is encouraged to use recycled rather than potable water, through the following policies: i) a limited quota of potable water is allocated to the agricultural sector; ii) a nationally subsidised wastewater recycling programme creates affordable water for farmers; iii) recycled water is sold to the agricultural sector at lower prices than potable water; iv) a free bonus is provided for all potable water that farmers give up from their allowable quota: an additional 20% (by volume) of recycled water is provided; and v) grant money is provided to farmers for construction of transport (piping) systems for recycled water.

Since the late 1990s, frequent years of extremely low natural precipitation, combined with the increasing domestic demands of population growth, have caused dramatic reductions in the allowable potable water quotas for agriculture. Reductions in quotas are therefore made by the Water Authority (originally called the Water Commission). The agricultural sector adapted rapidly to these restrictions through necessity thanks to the production and promotion of domestic recycled water, as well as through innovations in irrigation with semi-saline water, highly advanced crop irrigation practices and increasing crop tolerance to low water regimes.

In Japan, a river administration co-ordination system provides the exclusive and continuous water user in the agricultural and other sectors with water rights (use rights) and classifies water use for agriculture, industry, cities and hydraulic power. In Korea, the government is tightening the management of water demand. Demand for agricultural water is being controlled through long-term water resource management plans.

Source: OECD Survey on Water Governance (2010).

Box 4.7. OECD examples of co-ordination between water and energy policies

Often, co-ordination efforts between water and energy policies are undertaken from an institutional point of view. In Belgium, the Co-ordination Committee for International Environmental Policy (CCIEP) steering group for water has been established to co-ordinate water-related topics, in particular with the EU *Water Framework Directive* and issues related to environmental reporting, chemical substances, marine waters, biodiversity, nature and energy.

In France, policy coherence at the central government level is encouraged by a single ministry, the Ministry of Ecology, Energy, Sustainable Development and Maritime Affairs (MEEDDM), for both environment and energy policies. National goals for hydroelectricity are set according to water policies and targets, although this still has to be implemented at the basin level.

In England and Wales, the Environment Agency's water resources strategy has identified that for water used in households, 89% of the energy used in abstracting, treating, distributing, using and returning water to the environment is used on hot water in the home. The Environment Agency is now working with the Energy Saving Trust to develop policy in this area to target hot water use as a way of mitigating climate change.

In Spain, regular meetings are held between the Ministry of Environment, Rural and Maritime Affairs and the Ministry of Industry. Plans for renewable energy take into account the increasing needs generated by desalination plants, irrigation modernisation, water reuse, aquifer management in periods of droughts, etc. The General Directorate for Energy Policy and Mining in the Ministry of Industry, Tourism and Trade is represented within the National Water Council.

Box 4.7. OECD examples of co-ordination between water and energy policies (cont.)

Political commitments to co-ordinate water and energy policies can also lead to specific programmes at national level. In Israel, the co-ordination between policies for water allocations and energy consumption is explicitly addressed in the Israeli Water Authority's 2010 *Master Plan for National Water and Wastewater Management*, which includes several measures for minimising water-related demands on the national power supply (approximately 6% of the total national demand for electricity). These measures include adapting national energy demands to diurnal shifts, as well as reducing costs, energy conservation and minimising greenhouse gases.

To adapt energy demands, the Israeli Water Authority works with the Israeli Electricity Authority to limit daytime energy consumption rates. The Israeli Electricity Authority encourages customers to minimise their demand on electricity during peak (daytime) hours by selling electricity at much higher prices during the day. The Israeli Water Authority permits water pumping and purification operators the freedom to minimise their energy demands during these peak daytime hours. To minimise costs and maximise profits, operators pump larger proportions of the daily water quotas during the night hours, and store these in numerous reservoirs throughout the country. They thereby reduce energy costs, while helping homogenise energy demands across the day-night cycle. In another instance, the Israeli Water Authority issues tenders for the construction of large-scale desalination plants that are as energy-efficient as possible. This is accomplished by selecting the best bidders for each tender according to an evaluation (scoring) system and a set of rules that promote energy conservation. The scoring system favours bidders who produce the necessary power from their own natural gas-power source, rather than adding to demands on the national power grid. The scoring system favors such bidders in different ways. First, natural gas power generation has a much lower carbon footprint than coal generators (an environmental advantage). Builders immediately score higher in the environmental section of the scoring system if they build their own power supply generated by natural gas. Second, natural gas power generation is approximately 7% to 8% cheaper than the energy provided by the national (coal-driven) power system. The savings in cost reduces the cost of producing the desalinated water, thereby raising the bid-score further (since cheaper water scores higher). Builders are permitted to build a power facility that exceeds the required power for the desalination process. The additional energy is sold to the national power grid, at a profit to the builders. This allows them to further reduce the costs of the desalinated water-product (thereby further increasing their score). Third, builders who choose to rely on the national power grid rather than building their own natural gas system are required to pay half of the construction costs of such a power system to the government. Thus, they save only half the construction cost of a power plant.

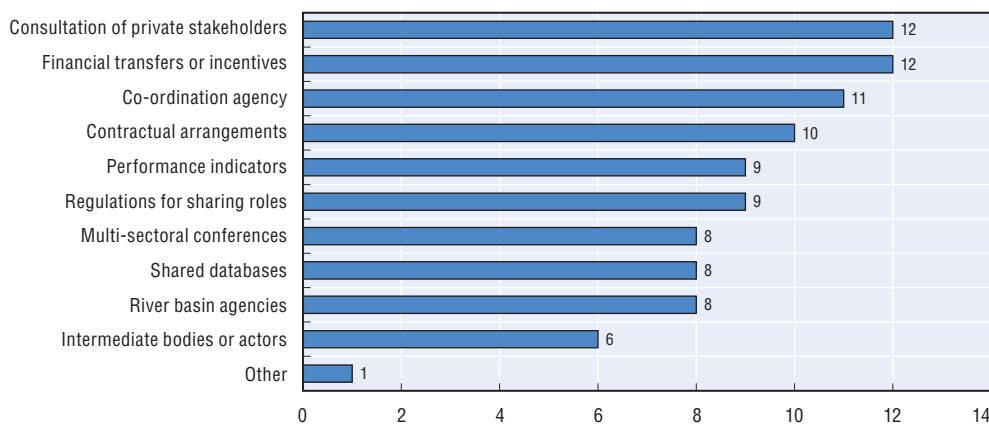
In Japan, river administrators give permission to water users for the use of flowing stream water (including hydraulic power) and the agricultural sector enhances the generation of hydraulic energy using irrigation water. In Korea, the government is striving to generate new and renewable energy for low-carbon green growth. It also assists energy production through water (hydropower, conservation of ocean thermal energy and solar power using water from dams and retention ponds). The recent establishment of the *Framework Act on Green Growth* is helping to develop green growth strategies.

Source: OECD Survey on Water Governance (2010).

Co-ordinating water policies between levels of government and across sub-national actors

In OECD regions, a wide variety of mechanisms exist for co-ordinating water policies across levels of government. These include, for example, the consultation of private actors (including citizens' groups, water users "associations and civil society") and financial transfers and incentives across levels of government (*e.g.* earmarked *versus* general-purpose grants for financing infrastructure). Other instruments they can consider are co-ordination agencies, contractual arrangements, (multi)sectoral conferences, performance indicators, regulations, shared databases, river basin organisations, regulation and performance indicators, and intermediate bodies. Some OECD countries have chosen to use all the mechanisms listed above (*e.g.* France, Mexico), while others have adopted none, due to highly centralised water policy and limited involvement of sub-national actors (Korea, Israel). This section will focus on some of these instruments.

Figure 4.3. **Vertical co-ordination mechanisms in OECD countries**
17 OECD countries surveyed



Source: OECD Survey on Water Governance (2010).

Performance measurement: Monitoring and evaluation of water policies

Building capacity and facilitating co-ordinated actions across levels of government can be achieved through performance measurement. Such measurement aims to provide information that can be used to enhance the effectiveness of decisions on policy priorities, strategies and resource allocation (OECD, 2009a). It usually takes place through monitoring and evaluation. *Monitoring* is an ongoing process and requires collecting and assessing both quantitative and qualitative information, and building a picture of the functioning and outputs of public policies and programmes. *Evaluation* occurs at specific moments in the cycle, and uses qualitative and quantitative data to assess whether or not objectives have been met. Both can help identify areas where co-ordination can be improved; support dialogue and negotiation for better allocation of resources or competences, and facilitate negotiating contractual arrangements. Performance indicators can reinforce linkages among policy stakeholders at different levels of government and contribute to learning and capacity-building. Such measurement becomes an invaluable tool for all levels of government, as well as for the other stakeholders in a multi-level governance context, including private water operators. It is a basis for dialogue, discussion and acquisition of knowledge, and helps a community of actors identify common reference points. But a key

concern is to what extent such information on performance is used to guide water policy decision-making and prioritise government actions.

A growing number of countries have established indicators for assessing the performance of their water sector, reinforcing incentives for sub-national governments and improving the knowledge base. Several OECD countries have adopted tools to measure progress in water policy implementation though monitoring systems are not always standardised across basins, and information is not systematically made public (*e.g.* to water users and NGOs) or used for benchmarking bodies in charge of water policies that guide public decisions. The following examples illustrate some interesting experiences in the OECD region.

Box 4.8. Performance indicators in the water sector: Some OECD examples

In Australia, the National Water Commission's Biennial Assessment of the implementation of the *National Water Initiative* reports progress in water reform at the sub-national level.

In the Netherlands, each Water Board uses systems to monitor progress in water policy, such as monitoring water quality and (water) ecology, planning and monitoring of space that is set aside for water retention. The STOWA (institute of Applied Scientific Research) is leading the drive toward standardisation of monitoring systems for water quality, water quantity and ecology. The Union of Water Boards organises a benchmark of the Water Boards every two years, and the benchmark is made public in the publication *Waterpeil*.

In Belgium, the Flemish Environment Report (MIRA) has been published since 1994 as an Indicator, Policy Evaluation, Scenario and Forecasting report. It includes trend analysis as a basis for evaluating progress. In addition, the Co-ordination Committee on Integrated Water Policy (CIW) has developed a follow-up system on the regional level for the implementation of *Water Framework Directive* measures. This consists at present of an MS Excel or Access application containing data listing basic information (who, what, when, etc.) as well as data that follow progress (expenses, time schedule, etc.).

In France, the *Contrat d'objectifs État-Agences* is a national reporting tool that evaluates water agencies' policies.

In Arizona, a *Water Policy Monitoring and Reporting Service*¹ was designed for municipal water resource managers, industry executives, attorneys and those interested in keeping current with the trends influencing the price and availability of water in Arizona.

In Portugal since 2004, all water utilities operating under concession contracts have the quality of their services (water supply and sanitation) monitored annually through a set of 20 performance indicators. This water quality regulation will be extended to all water utilities during 2011.

Finally, the European Union has also set up a methodology to evaluate water policies within its boundaries.²

1. www.elmontgomery.net/news/awpmpmr.php.

2. www.springerlink.com/content/n3361h07p4x020gm.

Source: OECD Survey on Water Governance (2010).

Though indicator systems are associated with strong benefits, certain caveats should be considered. Indicator systems are costly, both directly (*i.e.* the cost of development and implementation) and indirectly (*i.e.* opportunity costs and the potential for inadvertent generation of unintended consequences). They can also increase the administrative

burden on the reporting organisation and its staff. It is difficult to capture complexity with water data and indicators, which can lead to developing too many indicators rather than concentrating on a core group. Besides, it is tempting on the part of central government to substitute *ex ante* control of water services with performance indicators. This can lead to retaining control of how sub-national authorities implement water policy, as they will probably make choices and decisions that allow them to perform well within the parameters of the indicator system, at the expense of other elements.

The diversity of tools in place indicates that there is no optimal design for an indicator-based performance measurement system in the water sector. Its development should be a collaborative effort between the national and sub-national level, and the information it yields ought to cover inputs, processes and outputs that are relevant for ongoing activities. To use such information optimally, clear objectives for the data need to be established and proper indicators selected. Systems are needed to generate, validate and distribute the data; the information needs to be used in a suitable and timely fashion; incentive mechanisms are needed to encourage actors to follow a particular course of action; and appropriate use of the performance information must be planned for.

Shared databases and information systems

Water information systems (WIS) and common databases are key mechanisms for sharing water basin, country and international policy needs and information in different areas. In most countries, water data are commonly available for the hydrological issues (water scarcity, quantity and quality aspects), but are less common in the case of the economic and financial aspects (tariffs, infrastructure financing, etc.) and even more limited for institutional and territorial data (allocation of responsibilities, urban/rural challenges, etc.). A substantial effort has been made to improve the understanding and science of hydrological systems to guide water decision makers. Data collection efforts improving knowledge of the connections between groundwater and surface water are available, as well as for determining sustainable environmental flows in the context of climate change. But further innovations in economic, financial and institutional water data collection are still needed. These would include using new technologies, voluntary initiatives to collect data, and permitting public agencies to regulate, finance or charge for data collection, maintenance and analysis (OECD, 2010).

Table 4.3. Selected examples of databases and water information systems

Country or region	Name of the database or water information system
Worldwide	AQUASTAT, global information system on water and agriculture
European Union	Water Information System Europe
Euro-Mediterranean region	Euro-Mediterranean Information System on know-how in the Water Sector (EMWIS)
Spain	Spanish Integrated Water Information System (SIA)
Austria	Water Information System Austria (WISA)
Australia	Australian Water Resources Information System (AWRIS)
New Zealand	Water Monitoring and Reporting Programme
Turkey	Water Database Project
Japan	Variety of websites on water-related information
Korea	Rural and Agricultural Water Resource Information System
Mexico	National Water Information System
France	National System of Water Information (web portal, online metadata catalogue)

Source: OECD Survey on Water Governance (2010).

Recent reforms of water policy have often included a dimension concerning information. In Australia, for instance, under the *Water Act 2007*, water accounting and reporting functions are the responsibility of the Bureau of Meteorology (BoM). The BoM is required to compile and maintain water accounts, issue National Water Information Standards, hold, manage, interpret and disseminate water information and provide regular reports on the status of water resources and patterns of water resource usage. In addition, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) has conducted studies on the likely future availability of water, in light of climate change in a number of key water use areas.

It is not easy to assess how effective existing information systems and shared databases in the water sector are in bridging the information gap. A cost-benefit analysis of existing WIS is needed at local, regional, national and international levels, to determine how current water information and data are collected and used by policy makers (and even whether it is being used at all), and the costs and benefits of collecting, analysing and communicating this information. Increased efforts are needed to communicate the reporting and analysis of water data to policy advisors and the wider public, and not simply to the research community. Institutional obstacles and opportunities for effective governance of WIS should also be pinpointed, to identify areas of institutional overlap and synergies in water data collection; to mobilise local stakeholders in designing WIS; foster co-ordination between data producers and users; and encourage multi-discipline approaches in WIS.

Financial transfers across levels of government

It is not only central government budgets that finance water infrastructure. In many OECD and non-OECD countries, local governments can also play an important role in this regard. In decentralised governance systems, local authorities may be authorised to raise taxes and/or incur debt, usually within prescribed limits (OECD, 2009b). Mature capital and financial markets may provide creditworthy municipalities with capital for investment in water and sanitation infrastructure.

Financial transfers between different levels of government are crucial tools for bridging the *funding gap* in water policy. Fiscal transfers from central budgets are also a source of investment capital in some countries. Well-designed intergovernmental transfers can create incentives for improved financial sustainability and creditworthiness of local jurisdictions, eventually helping to decrease demands on central budgets. As with central authorities, the 3Ts (taxes, tariffs and transfers), including inter-governmental transfers, are the ultimate source of finance, since other forms must be repaid or provide compensation.

Financial transfers may have different purposes and can take different forms across OECD countries. These may include grants, funding programmes and specific agreements that can be included in contracts. All OECD countries use this mechanism except New Zealand and the United Kingdom. Korea, for example, has a specific Water System Fund, while in Mexico, CONAGUA programmes are the channel for conveying federal revenues to the state governments. In the Netherlands, the Deltafund 2020 transfers resources from the central government to the Water Boards, while in the United States, the financial incentive mainly consists in pooling funds between state and local groups. Though the *funding gap* is frequently managed via intergovernmental transfers that can be either vertical (from the central to the sub-central level) or horizontal (redistribution of wealth

across peer levels, *e.g.* between regions or municipalities), this mechanism is no longer sufficient to meet water financing needs.

In OECD countries, the cost of repairing and maintaining clean water infrastructure is continually rising, at a time when, given the economic and fiscal crisis, central government funding has been reduced. In addition to grants and financial transfers, solving the issue locally, through increased water and wastewater tariffs, would address only a portion of the problem. Other governance mechanisms need to be explored further to ensure proper water management over the long term.

Contractual arrangements between levels of government

Contracts among levels of government are also frequently used in multi-level governance relations to help manage interdependencies and solve some institutional weaknesses (OECD, 2007). Contracts enjoy a degree of flexibility of use and diversity of application, permitting governments to reorganise rights and duties without requiring a constitutional or legislative change. Complex policy domains, involving multiple stakeholders and issues, as in the water sector, generally rely on contracts among levels of government. First, contracts allow a customised management of interdependencies, which are useful in unitary states as an instrument in decentralisation policies. They also exist in many OECD federal countries, known as “*convenios*” in Spain; “*arrangements*” in Canada; “*joint tasks*” in Germany, and “*accordi*” in Italy. They are often broad in scope, with multiple goals. In most countries, contracts function as tools for dialogue, for experimenting and clarifying responsibilities and thus for learning. Impact evaluation should be encouraged, so as to make use of the results in adjusting the policy. Bilateral commitments validated by contracts among levels of government must be as verifiable as possible. Collaboration through contracts makes the need for strategic leadership at the sub-national level even more vital. In the water sector, “*river contracts*” are intended to develop and restore the multiple functions and uses of water in response to the needs of a community of users, through dialogues between different partners. For instance, under the *Transboundary River Contract Semois-Semoy* between Belgium (Wallonia) and France, both government and private-sector players have committed themselves to implementing a consensus-action programme to restore the river and the water resources of its drainage basin. Information and awareness campaigns can supplement the concrete work and operations of waterway development. The river committee can be a place for democratic speech, where citizens meet operators and different elements of society come together to take charge of a river’s future and their relationship with the river.

Legal mechanisms

Legal mechanisms are commonly used by OECD countries for promoting multi-level governance relations in water policy. They can address the *funding* and *capacity* gaps, but in the case of funding, may represent a double-edged sword. On the one hand, they can mandate resources for new and existing competences devolved to lower levels of government, thereby increasing funding capacity. On the other hand, if the technique used to provide the funds limits the willingness at the sub-national level to raise its own revenues, and increases its dependence on transfers, laws and legislation can serve to widen the funding gap. With respect to the *capacity gap*, legislation can be used to help establish frameworks or parameters that build sub-national capacity by allocating competences and resources. This can be accomplished at the central (national) level as

well as at the regional level in federal countries, for example. If it helps to define roles and responsibilities clearly, legislation can overcome problems of duplication and overlap. Assigning tasks, rather than allocating funding, can be a better way of managing problems of resource allocation. It also provides sub-national authorities with an opportunity for “learning by doing”, which can increase their overall capacity in the medium and long term. Common examples of legal mechanisms in the water sector usually refer to institutional and regulatory mechanisms for shared water basins, as well as dispute resolution mechanisms such as the Tribunal Award System in India, created in 1956 as the primary mechanism for resolving interstate water disputes.

Experimentation policies

At the territorial level, experimentation policies can be used as a vertical co-ordination tool if they can be assessed and disseminated to implement a proposed policy smoothly and to identify lessons and good practices. Most OECD countries surveyed have resorted to experimentation. In New Zealand, for example, the Kapiti District Council is encouraging the use of grey-water diversion devices to recycle water collected from bathrooms and washing machines for use in irrigation. This is a relatively new conservation measure, and several councils are watching the outcome of this pilot project closely.¹ In addition, there are many projects on implementing new water policies in different programmes, especially in the field of synergy between water and spatial planning. These projects are part of research programmes but are executed by consortia in which ministry, provinces, municipalities and the private sector are working together on new practices. In Korea, public facilities and public residential complexes are encouraged and some municipalities voluntarily recycle rainwater by using rainwater management facilities.

River basin organisations

In recent years, river basin management has been proposed as one element for addressing the *administrative gap*, ensuring a holistic and hydrological approach to co-ordinate water policy across sub-national actors and between levels of government. On the one hand, the basin perspective makes it easier to integrate physical, environmental, social and economic influences on water resources. On the other hand, the decentralisation of water governance has increased the number of relevant (administrative) boundaries and organisations. In combination with the introduction of basin management, problems of interplay now arise that have not so far been sufficiently addressed by practitioners and by scientific research. The literature advocating Integrated Water Resources Management (IWRM) and basin management, for example, rarely deals with the friction between bodies organised along administrative and hydrological boundaries. Communication between these organisations across levels and in various policy fields is essential for efficient water management that can support adaptive water governance. The implementation of effective water policies, therefore, raises the question of the “relevant scale” for service delivery and resources management, in light of the fact that environmental issues, given the possibility of externalities, often require larger-scale approaches reducing territorial fragmentation (OECD, 2009c).

In all OECD countries where they exist, river basin organisations are significant actors in the co-ordination of water policy across levels of government. In Australia, Belgium, France, the Netherlands, Italy, Mexico, Spain and Portugal, they assume a wide array of responsibilities, with the common objective of harmonising water policies at basin level. Basin

Box 4.9. A regional approach to water governance: The example of the PACA region in France

Despite the availability of water and the existing infrastructure networks, France's *Provence-Alpes-Côte d'Azur* region has experienced several years of drought. This situation was a result of sporadic water shortages in specific areas and substantial regional disparities in water resources, especially between the coastal areas, where demand is high, and the hinterland. The *Water Resources Prospective and Management Scheme* (SOURCE), launched in 2009, is an ambitious EUR 400 000 project to build by 2030 a strategic vision and operational framework across levels of government (including the state and the *Rhone-Méditerranée-Corse* water agency) and to define the terms for effective water governance at the regional level.

This strategic multi-level and multi-actor initiative, based on wide consultation, aims to ensure access to water for all on a permanent basis, while preserving the state of rivers and groundwater. It develops a model of public governance of water for equitable sharing of water by 2030, taking into account the economic, demographic and environmental evolution of the territory. It is organised under the auspices of the EU *Water Framework Directive* and the French national organisation for the development and management of water resources (the *Schéma Directeur d'Aménagement et de Gestion des Eaux*, or SDAGE) and is mainly funded by the European Regional Development Fund.

The project addresses water challenges throughout the PACA region, over the medium to long term, under three guiding themes, demography, economic development and climate change. It seeks to:

- specify knowledge about water and its various operations, its renewal terms related to the functioning of aquatic environments and the evolution of activities associated with them by 2030;
- identify new proposals for intervention in the region for sustainable management of water resources;
- identify how to direct or to redirect management methods if necessary;
- enhance awareness and involvement of local actors, for a new common and shared governance;
- put the analytical framework into perspective, with potential changes in business lines and territories.

This process involves the regional partners in consultation in each of three steps:

1. Achieving a shared diagnosis, on the basis of six workshops held in the region in the fall of 2009 and the first restitution workshop seminar held in December 2009.
2. A forward-looking phase, to define and analyse a combination of plausible scenarios for water policy by 2030. Its achievement was mainly based on a working group that met in three succeeding stages between November 2010 and January 2011 and was completed by workshops conducted on six areas of the SOURCE.
3. Formalisation of the project by developing strategic directions a critical phase of the process, which will transform the strategic stakes in the decision-making processes into quantitative targets and organisational terms for governance at the regional level.

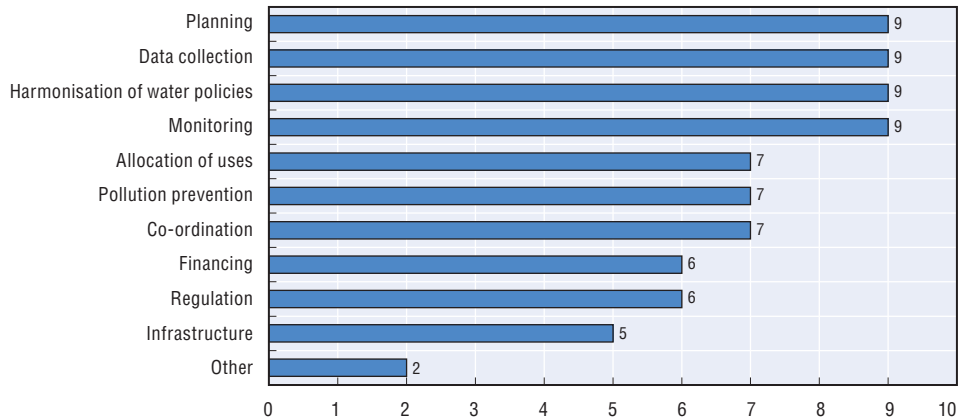
In addition to the project and its various components (strategic, operational and multi-actor governance system), one of the goals of this phase is to produce a charter of commitment to the *Principles of Shared Water Resources*. This charter will be presented and signed at the Regional Water Forum (*États Généraux de l'Eau*) that will conclude the Regional Year of Water in February 2012. This will prepare for the World Water Forum, to be held in Marseilles in March 2012, a large-scale celebration of this partnership, which has mobilised all water stakeholders in the territory for more than two years.

Source: OECD Survey on Water Governance (2010).

authorities have a key role in co-ordinating the different stakeholders at local level through planning, monitoring, regulation, data collection, financing and allocation of water uses.

River basin organisations' missions, constituencies and financing modes vary across OECD countries. All the river basin authorities in the countries surveyed have functions related to planning, data collection, harmonisation of water policies and monitoring. However, their

Figure 4.4. **Missions of river basin organisations in OECD countries**
17 OECD countries surveyed



Source: OECD Survey on Water Governance (2010).

role in the allocation of water uses, prevention of pollution, co-ordination, financing and regulation is not systematic. Their spheres of action also vary: in France, they are spread throughout the country, while in other countries (e.g. Australia), they are concentrated in a specific area. In most cases, the principal actors in river basin organisations are central government ministries and public agencies, and/or local and regional authorities. Sometimes, river basin authorities are also accountable to citizens and NGOs. In the sample of countries surveyed, basin authorities are financed both by autonomous budgets (e.g. collection of water revenues) and grants from the central government. In some cases, sub-national governments also contribute to river basin authorities' funding. This is the case in Australia, Italy, Mexico, the Netherlands, Spain and the United States.

The maturity of river basin organisations also varies across OECD countries, especially in co-ordinating competing uses, which requires equitable approaches to resolving conflicts in the political and legal arenas. France and Spain are pioneers in setting up river basin agencies, while other OECD countries, such as Australia, have only recently adopted such arrangements.

The European Union has lent important impetus to the expansion of river basin authorities, including in non-EU member states. Adopted in 2000, the *Water Framework Directive* (WFD) commits the shared will of EU member states to applying river basin management at the level of major river basin districts, setting itself the ambitious collective goal of maintaining or restoring good ecological status in these districts by 2015. An EU Branch (EURO-INBO) of the International Network of Basin Organisations was created in 2003 to enhance a common implementation strategy (CIS) across EU basin organisations and water district authorities. The exchange of experience on good practices was encouraged to overcome operational challenges and generate concrete proposals. The INBO is a strong advocate of the EU directive, which it considers a means to achieve integrated water resources management at the basin level, independently of administrative and national boundaries. To date, 170 river basin districts have been created in the EU, 40 of which are international basin districts and cover 60% of the EU territory. International co-ordination is an important challenge in the implementation of the directive. As the role of sub-national governments is essential to its successful implementation, the combination of regulatory, financial and contractual tools will require

Box 4.10. River basin organisations: Selected examples from OECD countries

Spain's experience in water management through a single authority acting within the unit of a single natural river basin (or group of small river basins) dates back to 1926, when the *Ebro River Basin Authority* was created. Water users were allowed to participate in the management bodies, and among the river basin authority's tasks was the creation of a general co-ordinated and methodical plan for the use of the waters in the river basin. In addition, as a result of the *EU Water Framework Directive*, 23 planning areas have been established, corresponding to the 23 basins in Spain. Nine coincided with already existing River Basin Authorities, and 13 others are located in autonomous (intra-regional) regions: Cataluña, the Balearic Islands, Andalusia (3), Galicia and the Canary Islands (7).

A final planning area includes all the rivers that flow into the Cantabrian Sea within the Basque Region, whether they are intra-regional (exclusively within the Basque country) or inter-regional (shared by two or more regions). The adoption of new water governance arrangements in the interregional basins after regional governments' competences were increased is now a source of tensions, as the regional governments are calling for further representation in the organisation and management of River Basin Authorities. Since 1998, investments at basin level have been entrusted to expressly created public agencies in the each basin and financed with their own funds.

In France, river basin management organisation dates back to 1964. Motivated by a need for solidarity between different hydrological units, it was established to fight against pollution and increase understanding of local concerns, chiefly over the question of finances. France was divided into seven units corresponding to hydrological basins and five departments overseas where administrative and hydrological boundaries are mixed. The role of French water agencies is to facilitate common interests. They benefit from financial autonomy on the principle of "polluter pays", with a tax that water users pay to local actors and planners.

In Australia, the recently established *Murray Darling Basin Authority* (MDBA) is now consulted, along with territory governments and stakeholders including rural communities, in the preparation of basin plans. These are intended to set a long-term sustainable limit on the use of both surface and groundwater. The MDBA is supported by the *Murray Darling Basin Ministerial Council* (MDBMC) and the *Basin Officials Committee* (BOC), on which all basin states are represented.

In Mexico, the recently created Basin Authorities (BAs) have been developed from the 13 existing regional offices of CONAGUA. They are expected to be responsible for formulating regional policy, designing programmes to implement such policies, conducting studies to estimate the value of the financial resources generated within their boundaries (water user fees and service fees), recommending specific rates for water user fees and collecting them. A total of 25 Basin Councils (BCs) have been established with the same basin boundaries as the BAs, including two or more within the area of one BA in some cases. Some states are located entirely within the area of one BC. In other cases, where a state is divided between two or more BCs, the state participates in all the BCs within its territory.

Source: OECD Survey on Water Governance (2010).

co-ordination across the public agencies in charge of water policy making, basin organisations, NGOs, local actors and private stakeholders.

Though watershed agencies have emerged to resolve issues related to the *administrative gap*, they are often not politically meaningful to stakeholders, particularly

**Box 4.11. Implementation of the EU Water Framework Directive:
Progress and main bottlenecks**

The Water Framework Directive has played a significant role in improving water governance within the EU. It has resulted in major advances towards co-ordinating hydrological planning and water policy within and across European countries. Although the process has a direct environmental target, a homogenisation of water governance arrangements was *de facto* and indirectly generated.

In principle, starting in January 2010, all EU countries should have moved from the “preparation” stage to the “implementation” phase of the directive, with firm compliance commitments within the deadlines imposed. However, the European Commission has noticed serious delays in the delivery of river basin management plans (RMBP).

In several EU countries, consultation processes are ongoing, while in others (Portugal, Malta and Greece), they have not even started. To date, 91 out of 170 hydrographical districts have published their plans, only 14 countries delivering their plans on time: France, the United Kingdom, the Netherlands, Germany, Luxembourg, Czech Republic, Slovakia, Austria, Romania, Bulgaria, Latvia, Finland and Sweden. International district management plans have been published for the Danube, Rhine, Elbe, Ems, Meuse and Escaut rivers. Existing international commissions act as platforms for co-ordination of actions, harmonisation of practices, conflict prevention and exchange of information between neighbouring states.

Improvements are still needed in the international district management plans (for example, 18 countries are included in the Danube River Basin, the most international river basin in the world). These too often consist in a compilation of individual national “pieces”, with each member state essentially accountable to the European Commission for the implementation of the directive within its boundaries. In international districts, the different countries do not always have the same priorities, calendars and practices, including on such issues as watershed management with non-EU member states.

Better governance is a crucial challenge for incorporating the directive into national law. Interestingly, countries that have come late to the WFD implementation process are not newcomers in the EU but either states facing challenging political resistance (rivalries between territories and levels of government) or countries that have engaged significant parallel reforms in the water sector, which have delayed the enforcement of EU requirements (*e.g.* Portugal). *Capacity gaps* are thus not the only explanatory factors. A major obstacle to the implementation of the EU directive lies in the additional financial cost, which is estimated to be up to 30% in some water districts. This may require an equivalent increase of water tariffs unless other sources of financing can be found.

The EC is preparing an intermediary evaluation report of the river basin plans, which will be published in 2012. There is a debate on how this heterogeneous information, based on different levels of details, quality of responses and methodologies, will be aggregated and analysed by the EC. Sanction procedures have already been initiated against countries that have delayed the incorporation of the WFD into national legislation, and no less than 20 member states have been investigated for non-compliance regarding the implementation of the directive.

agricultural users, whose water and land use behaviour is so critical to water security. Watershed agencies are not without their flaws, and have been criticised for embracing a top-down approach, driven by experts and lacking in transparency. In addition, the prioritisation of holistic management often typical of watershed management agencies

has resulted in “poacher-gamekeeper” conflicts of interest, in which regulatory, ownership and service provision functions overlap, sometimes with negative consequences.

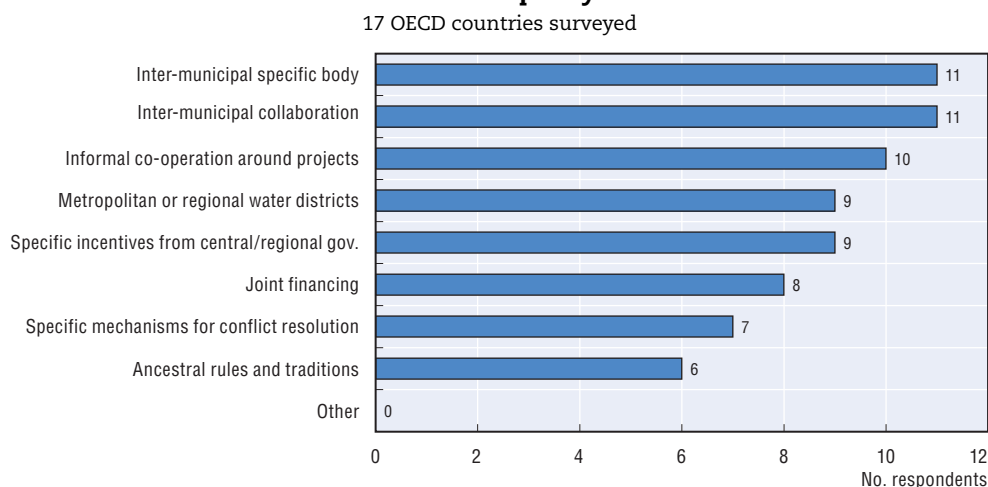
Some countries have set up co-ordination mechanisms across basins to create networks to facilitate co-ordination at the territorial level and dialogue with central government. In Canada, the Mackenzie River Basin Board² was created as a forum for co-operative water management within the huge Mackenzie River Basin. Of its 13 members, three represent the federal departments of Environment, Health and Indian and Northern Affairs. Each of the provinces and territories has two members, one government representative and one representative of Aboriginal organisations. The Board’s Guiding Principles include the necessity to provide for early and effective consultation between the different stakeholders, as well as notification and sharing of information on developments that might affect the ecological integrity of the aquatic ecosystem across jurisdictions. In addition, there are other watershed initiatives with cross-ministerial co-ordinating committees (e.g. the St. Lawrence Plan) and inter-departmental committees are formed on an issue/initiative-specific basis. In the US state of Colorado, co-ordination across basin organisations is embodied in the Interbasin Compact Committee and Basin Roundtables (IBCC), which was established to facilitate conversations among Colorado’s river basins and to address state-wide water issues. This 27-member committee encourages dialogue on water, broadens the range of stakeholders actively participating in the state’s water decisions, and creates a locally driven process in which decision-making power rests with those living in the state’s river basins. As such, IBCC has been helpful in co-ordinating between various local conservancy districts with state-level agencies and local stakeholders. This is useful in so far as there are so many conservancy districts in Colorado that almost none have jurisdiction over an entire a river basin. In order to account for all alternatives, co-operation is therefore necessary.

In addition to river basin organisations, OECD countries employ a wide range of mechanisms to manage the interface between actors at the sub-national level and to build capacity in the water sector, ranging from intermunicipal collaboration or dedicated bodies to informal co-operation around projects, metropolitan or regional water districts, specific incentives from central and regional governments, joint financing between local actors involved in water policy, as well as the adoption of specific mechanisms for conflict resolution or ancestral rules. Other tools frequently used in the water sector include training, workshops and conferences as well as experimentation policies at the territorial level, which can synthesise many of the mechanisms previously explored.

Citizen participation

The involvement of local actors and citizens is key for managing rivers in a sustainable way, better co-ordinating public action across levels of government and reducing conflicts at the local level. For example, the EU directive established the broad involvement of citizens, interested parties and non-governmental organisations (NGOs) as a general principle of implementation. Participation is understood as a prerequisite for successful implementation. Widening public participation is seen as a means to increase transparency of environmental policies and citizens’ compliance with it. Transparency in the establishment of objectives, the imposition of measures and the reporting of standards is seen to empower citizens to influence the direction of environmental protection.

Figure 4.5. **Existing tools to manage the interface between sub-national actors in water policy**



Source: OECD Survey on Water Governance (2010).

Inter-municipal collaboration

Authorities in metropolitan areas are confronting the main gaps in water governance, especially those in decentralised (multiple-tier) political systems, with a proliferation of government agencies and institutions with responsibility for various aspects of water management. Essentially, this entails designing and implementing programmes that respond to three primary problems (or “symptoms”) of weak water governance: insufficient co-ordination; a short-term focus; and a lack of integration of other policy areas with water policy making. The table below contextualises the gaps in a metropolitan context, along with the tools and strategies available.

The metropolitan governance question is not whether multiple scales of government should be involved, but rather *how* and on *what* basis. This creates and exacerbates both vertical and horizontal gaps, and, in the case of lack of co-ordination between government agencies, is expressed as a set of “policy gaps”. Competition between agencies exacerbates “funding gaps”, as resources are diverted to certain water-related sectors and not others. All these gaps may be expressed by actors at the urban scale, but are by no means unique to them nor caused by them.

Inter-municipal collaboration helps sub-national governments reach a “critical mass”, increasing efficiency, enhancing capacity of sub-national governments in water policy and fostering lower horizontal co-ordination. It helps bridge a number of gaps, including those of capacity, administrative and funding, to meet the substantial financing requirements for the construction, operation and maintenance of water and sanitation infrastructure. Most OECD countries are concerned with the question of “relevant municipal scale” for public services. The issue of a “perfect size” in water management has been a long-standing topic of debate over economic and public finance. The key question is whether an optimal size can be identified that would allow both optimal conditions for efficient water resources management and effective service delivery. However, detecting the presence of economies of scale at the municipal level and identifying an “optimal,” or “perfect,” size is difficult and varies greatly across countries (OECD, 2009d).

Intermunicipal co-operation is a common feature of water and sanitation service delivery in OECD countries. Intermunicipal collaboration is clearly seen in metropolitan areas

Box 4.12. OECD examples of water users' associations' (WUAs) involvement in water policy

There are multiple examples in OECD countries of WUAs' involvement in water policy, with varying degrees of power and organisational structure.

In Belgium, water users' associations are organised at *regional level*. In Flanders, the main water users are represented in the Flemish Environment and Nature Council (MiNa Raad), the Flemish Social and Economic Council (SERV) and the Flemish Agriculture and Horticulture Council (SALV). These councils advise on integrated water policy and planning. In addition, sub-basin councils advise on draft basin and sub-basin management plans, and represent different categories of users involved in water policy. In the Wallonia region, there is a Consultative Commission on Water within the Social and Economic Council (CESRW), which can provide opinions on any issue or legislative project related to water policy, by its own and upon the government request. It represents different types of stakeholders (industry, agriculture, trade unions, consumers' association, municipalities, environment associations, river contracts, water producers, etc.). In addition, the AQUAWAL (*Union professionnelle des opérateurs publics du cycle de l'eau*) gathers the main water drinking producers and sanitation actors within the region. Finally, river contracts federate, at sub-basin level, water actors ranging from municipalities and administrations to fisheries, tourism and sanitation stakeholders, for adopting of specific programmes of action, relaying legislative and regulatory information at local level, and collecting related opinions at local level.

In the United States, each Water Conservancy District has a certain level of input on water policy decisions in its area. For example, the Southwestern Water Conservation District compiles surveys of irrigable lands and domestic water needs. The Colorado River Water Users Association was organised in 1945 to protect the interests of all those who rely upon the Colorado River system for their water. It remains committed to fostering co-operation between the states to reach agreement on fair methods of sharing water resources.

France is an example of multi-level organisation of water users' associations at national, basin, sub-basin and local levels.

- At *national level*, associations for environmental protection (e.g. *France Nature Environnement*), consumers' associations (e.g. *Union Nationale des Familles*) and professional associations (e.g. agriculture, industry and trade chambers of commerce, trade unions and professional federations). In addition, the National Water Committee, created in 1964, brings together water users' representatives, associations, presidents of basin committees, national and local authorities (sub-national governments and central government departments and agencies), in addition to other experts and the presidents of basin committees. It provides guidance on the strategic orientation of national water policy, and recommendations on government legislation, reform projects and action plans. It also has a consultative committee that can give its opinion on the price of water, the quality of drinking water and wastewater services. Since 2006, committees on fisheries and on water information systems have also been created, and the prerogatives of certain categories of users have been reinforced.
- At *sub-national level*, each basin has a *Basin Committee*, whose president is a local representative. It is composed of representatives from local authorities (40%), water users and associations (40%) and the central government (20%). All categories of users are represented in this entity, which provides guidance on water policies at the basin level and designs the *Schéma Directeur d'Aménagement et de Gestion des Eaux* (SDAGE). The Basin Committee also monitors the implementation of the SDAGE and sets the main agenda of the water agency, while proposing, for instance, the amount of revenues taken in by the agency and passing the multiyear programme of the water agency (priorities, procedures for subsidies, etc.), which helps to finance the implementation of the SDAGE.
- At the *river, sub-basin or aquifer level*, there is a *local water commission*, composed of local authorities' representatives (50%), water users' representatives (25%) and created to design and follow the local implementation of the SDAGE.

Box 4.12. OECD examples of water users' associations' (WUAs) involvement in water policy (cont.)

- For local public services (water and wastewater treatment), each municipality above 10 000 inhabitants has a local consultative commission on local public services, which monitors access and quality to services and reports on the activity of state-owned companies. This commission is also consulted for any project contemplating a delegation of service delivery or the creation of a utility with financial autonomy.

In England and Wales, participation in water management occurs at three levels: formal consultation, public involvement, or direct participation by the public. Formal consultations often leave the public in a contestatory role and ignore the silent majority, focusing on the more vociferous minority of the population. Public involvement is less formal and can take a variety of forms. Although it does not allow the public to become directly involved in the decision-making processes, it provides members of the public an opportunity to comment upon plans for river works or the redevelopment of a river location, or to indicate what they want from the rivers that flow through their local area and which they use for recreation and amenity. True participation actively involves the public in decision-making processes. Citizen participation at all three levels provides environmental education, however, and personal experience promotes greater public awareness and understanding of environmental issues.

In Spain, water users' associations are firmly based on the structures that were developed more than seven centuries ago. Most of them are represented in the National Water Council: the Spanish Federation of Municipalities and Provinces (FEMP), the National Federation of Irrigation Communities of Spain (FENACORE), the association of the electricity industry (UNESA) and the association of Water and Sanitation Delivery Business organisations also have a representative, as do trade unions and associations, for the management, protection and quality of surface and groundwater. All River Basin Authorities and users' assemblies also involve water users' associations. They have the character of "public corporations", which allows them to impose water charges and prosecute those who do not meet payment deadlines. Their typical organisational structure includes a general assembly, an executive board, a manager, as well as operation, maintenance and financial departments. This structure has facilitated participatory management in Spain's water policy of, among others, irrigation schemes.

Source: OECD Survey on Water Governance (2010).

where an agglomeration effect arises from a set of municipalities that, taken individually, are much smaller than the metropolitan whole. Individually, their capacity to design, carry out and implement water policies may be limited, but as a group (intermunicipal bodies, etc.), they can be a strong player in the relationship among levels of government when pooling resources, skills and technical expertise. However, if metropolitan and water boundaries do not match, additional actors at basin and sub-basin levels have to be taken into account when it comes to aligning views, interests and motivations. This also raises the question of the relevance of administrative boundaries in a metropolitan region, for instance where there is barely a metropolitan authority but a multiplicity of cities, regions implied in governance. The evolution of such boundaries may not coincide with that of metropolitan areas, and the appropriate scale of water resources management and service delivery is of primary importance.

Co-ordinating bodies at the sub-national level

Co-ordinating bodies between central government and local authorities are useful mechanisms to foster vertical co-ordination, build capacity and share good practices at the sub-national level. They can take the form of committees, commissions or agencies and can sometimes be leading actors in fiscal capacity-building by representing the interests of

the local or regional level to national-level decision makers. Working groups are an alternative form of co-ordinating body, and tend to focus on a specific topic, including representatives from the central, provincial and local levels. For example, the Canadian Council of Ministers of the Environment (CCME) is comprised of the environment ministers from the federal, provincial and territorial governments. These 14 ministers normally meet at least once a year to discuss national environmental priorities and determine work to be carried out under the auspices of CCME. The council seeks to achieve positive environmental results, focusing on issues that are national in scope and that require collective attention by a number of governments. Through collaborative efforts, CCME working groups develop recommendations for ministers' consideration. Once approved, these products are available for use by CCME's member governments in their environmental management role.

Selected tools and strategies for addressing multi-level governance gaps in metropolitan areas

A common "vision" is one means of reducing the fragmentation of governance of watersheds in metropolitan areas. Around the world, many communities (following models developed through international processes such as Agenda 21) have developed a "sustainable community vision", which in turn provides guidance to communities on policy making, including preferred water management goals and strategies. This is particularly the case with respect to broader ecological issues: in this regard, greater attention could be paid to ecological restoration (and the potential benefits of reducing water quality and flood mitigation expenses elsewhere in the watershed). A long-term strategic exercise should take into account lessons learned from international examples in city-regions; for example, London's visioning exercise for the Thames and the *Comparing Futures* initiative in the San Joaquin-Sacramento Delta in northern California (Public Policy Institute of California, 2007, 2008).

National governments can encourage metropolitan regions to craft improved water governance structures. An example of an OECD country encouraging its cities to move towards such a model is Australia, where the 2007 national water initiative commits states and territories to innovation and capacity-building to create *Water Sensitive Australian Cities* (Clause 92). This agreement called for Australia to develop national guidelines for evaluating options for water-sensitive urban development and urged a review of the institutional models for achieving integrated urban water-cycle planning and management. Likewise, metropolitan areas outside Australia could benefit from similar engagement by national authorities to facilitate improved water governance in metropolitan areas.

Transition towards a "water-sensitive cities" model holds promise for metropolitan water policy. Beyond merely recognising the need for environmental sustainability, a "water-sensitive cities" model would require reform of the existing contract between citizens and governments over water policy, infrastructure, technologies and urban form, and would reinforce water-sensitive behaviour. This could be carried out through a flexible institutional regime that would co-manage water resources through multiple government levels, communities and economic sectors. Such a transition would entail intergenerational equity and resilience to climate change. The examples given in this section, from Helsinki to Venice, suggest that significant progress has been made to ensure a more water-sensitive metropolitan governance model, but that much work lies ahead.

Table 4.4. **Tools and strategies for addressing governance gaps in metropolitan areas**

Gap	Metropolitan context	Tools and Strategies
Accountability gap	The failure to demonstrate adherence to capital plans for water and sewage infrastructure through publicly available audited financial statements It also raises the issue of transparency and institutional quality at the metropolitan level	• Consultation processes • watershed committees • collaborative planning processes, watershed partnerships • public participation • strictly enforcing bid validity and contract negotiation periods • ensuring good record-keeping • reviewing bids for unusual patterns • integrity pacts • using probity advisors and auditors • registering complaints • strengthening bid evaluation teams and regulatory scrutiny of major investments • accounting controls through regular external (financial) audits
Administrative gap	Geographical “mismatch” between hydrological boundaries and geopolitical/administrative boundaries	• aligning institutions with hydrological boundaries • performance-based contracts • partnerships established between the national level and the local level, integrating water sensitivity into urban planning and growth-management strategies
Capacity gap	“Local” water management actors have insufficient expertise, knowledge and infrastructure to effectively apply water policy	• interagency collaboration on information-sharing • consolidation of urban water utilities
Funding gap	Unstable or insufficient revenues undermine co-ordinated governance	• traditional financial transfers between levels of governments (whether these are earmarked or non-earmarked grants) • the attraction of a broader range of sources of finance, such as loans, bonds and private investors
Information gap	Lack of access to sufficient scientific/technical information, depriving policy makers of a common frame of reference	• monitoring and evaluation of water-related goals • establishment of online sources of historical data on water resources and quality • establishment of benchmarks to evaluate fresh water quantity or quality within municipal urban plans • accords to improve environmental data collection for binational and trilateral urban agglomerations
Objective gap	The adoption of convergent water-policy making targets in a metropolitan area by different stakeholders	• jointly used plants • shared water resources • countywide or national associations of utilities • joint procurement systems • joint training • pooling of common equipment • joint lobbying to legislative authorities
Policy gap	Jurisdictional fragmentation of water-related tasks amongst government ministries, agencies and non-governmental actors hinders integrated policy development	• multi-stakeholder water governance partnerships • advisory collaborative bodies • multi-stakeholder “learning networks” between government, community, industry and researchers • regional assemblies, power-sharing instruments • interministerial co-ordination

Conclusion

Governance instruments for managing mutual dependencies in the water sector at horizontal and vertical levels reveal a wide variety of mechanisms in place *across* and *within* OECD countries. All countries surveyed have put in place co-ordination mechanisms at central government level (some countries have even adopted almost all co-ordination instruments listed, *e.g.* France, Mexico) and most of them have engaged in efforts to co-ordinate water with other policy areas such as spatial planning, regional development, agriculture and energy. Most countries have also set up vertical co-ordination instruments, except in countries where sub-national levels are only involved in the implementation stage of water policy.

Co-ordination mechanisms range from hard to soft, formal to informal, clear-cut to flexible instruments. Incentives for co-ordinating water policies and building capacity at the territorial level proceed from a variety of parameters. While national and sub-national capacity is of primary importance in multi-level governance relations, the line between co-ordination

and capacity is not always clearly demarcated. Co-ordination can help in disseminating good practices and spreading the benefits of diversification of water policy, thereby also building capacity. Thus, co-ordination and capacity-building go hand in hand: they are synergistic processes that can be mutually reinforcing, provided there is a territorial approach to water policies.

Despite the efforts to foster integrated water policies, OECD countries still report significant challenges in co-ordinating water policy action across ministries and between levels of government. The adoption of all possible co-ordination instruments does not necessarily guarantee “effective” water governance, as such tools may overlap and ultimately neutralise each other. To respond to changing circumstances and to enable incremental evolution rather than occasional major overhauls, administrative flexibility should be promoted, e.g. through the use of task forces or commissions with specific mandates.

No governance tool can offer a panacea for integrated water policy, and no systematic one-to-one correlation exists between tools and gaps. A given tool can solve several gaps, and solving a specific gap may require the combination of several tools. The following chapter provides preliminary considerations when approaching the effectiveness of governance tools in bridging identified gaps in water policy and concludes with guidelines for effective management of multi-level governance in water policy.

Notes

1. More information can be found at: www.maf.govt.nz/mafnet/rural-nz/cif/projects/2009/09-07/index.htm.
2. www.mrbba.ca.

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Chapter 5

Final Considerations for Water Policy Governance: Preliminary Guidelines

This chapter summarises the main findings of the report regarding: i) the institutional mapping of roles and responsibilities; ii) key multi-level governance challenges in water policy design and implementation; and iii) common governance instruments to manage the interdependence between levels of government and build capacity. It draws the lessons from OECD experience in the governance of water policy and suggests preliminary guidelines intended as a tool for policy makers to diagnose and respond to multi-level governance challenges in water policy.

Findings of the report

This report addressed the major co-ordination and capacity-building issues related to the design and implementation of water policies, based on the OECD *Multi-level Governance Framework*. It focused on three points: i) the role and responsibilities of public actors in water policy at central and sub-national levels; ii) the challenges related to their interaction at horizontal and vertical levels; and iii) the tools and strategies currently in use to enhance governance in the water sector. Data collection for the synthesis report and the country profiles attached was mainly based on a comprehensive survey, in which 17 OECD countries participated. Respondents included central administrations, regulatory agencies and river basin authorities.

The institutional mapping of roles and responsibilities in OECD countries' water policy produced by the report (Chapter 2 and Annex 5.A1) revealed certain key features:

- While in some countries the allocation of roles and responsibilities is so scattered across central and sub-national levels that it is impossible to capture a “national” model, in most countries the central government still plays a strong role in water policy. In all cases, multiple actors play a role in water policy design, regulation and implementation across ministries, public agencies and levels of government, thereby generating sectoral fragmentation with a high impact at the territorial level.
- Although sub-national governments are in charge of implementing water policies in two-thirds of OECD countries surveyed, their involvement can be classified into three categories: i) where they are the main players in water resources management and service delivery (*e.g.* United States, Canada Belgium); ii) where they play a significant role along with the central government (*e.g.* EU countries, New Zealand, Mexico); and iii) where their role is mainly restricted to “implementation” (*e.g.* Israel, Korea, Chile). Where sub-national governments have prerogatives in water policy, generally regions and river basin organisations (if any) are primarily responsible for water resources management, while municipalities are primarily responsible for water services delivery.
- The comparison of allocation of roles and responsibilities in water policy across OECD countries allowed for the definition of three non-normative models, each of which raise different water governance challenges. A *first category*, with multiple actors at the central level and few “implementers” at the sub-national level, revealed the need for co-ordination across ministries and between levels of government (*e.g.* Korea, Chile and Israel), despite existing mechanisms such as interagency programmes. A *second category* with multiple actors at both central and sub-national levels revealed the need for co-ordination across ministries, between levels of government and across local actors (*e.g.* France, Mexico, and Spain). A *third category* with few central government actors and multiple sub-national authorities revealed the need for co-ordinating across sub-national actors and between levels of government. Whatever the challenge, implementing an integrated and placed-based approach to water policies at the territorial level (Model No. 1), integrating the involvement of different actors at central and sub-national levels

(Model No. 2) or integrating multisectoral and territorial specificities in strategic planning and design at the central level (Model No. 3), it is crucial to manage mutual dependencies between levels of government in water policy making. In most cases, countries cited as examples have adopted a series of instruments to overcome such challenges.

The overview of multi-level governance challenges in OECD countries' water policy making (Chapter 3) identified common trends:

- In two-thirds of OECD countries surveyed, the *funding gap* is the main obstacle to vertical and horizontal co-ordination of water policies, either because of unstable and insufficient revenues of sub-national actors, or because of a mismatch between administrative responsibilities and ministerial funding.
- Despite the existence of water and sanitation networks and the regular transfer of know-how, the *capacity gap* is still the second most important challenge in OECD countries – especially at the sub-national level – because of the lack of staff, time, technological expertise and innovative water processes.
- Two-thirds of OECD countries surveyed still face a *policy gap* because of the fragmentation of water roles and responsibilities across central government actors and at the sub-national level. This is mainly explained by the lack of institutional incentives to foster horizontal co-ordination between different policy fields, which generates obstacles in the implementation of integrated central government decisions at regional and local levels.
- The *administrative gap* is the fourth most important governance challenge. The mismatch between hydrological and administrative boundaries still has significant impacts on water policy implementation, even in countries that have adopted river basin management. Finally, information, accountability and information gaps are still important obstacles to integrated water policy in half of the OECD countries surveyed.

The identification of governance instruments for co-ordinating water policies across ministries, local actors and levels of government (Chapter 4) highlighted a wide variety of options, often combined in OECD countries:

- All OECD countries have set up co-ordination tools at the central government level, which mainly consist of line ministries; interministerial bodies or mechanisms; co-ordinating bodies such as *ad hoc* high-level central agencies; groups of experts, or interagency programmes. In particular, most countries have made efforts to co-ordinate water and other policy areas, including spatial planning, regional development, agriculture and energy.
- Where they exist, river basin organisations, performance measurements, water information systems and databases, financial transfers, intermunicipal collaboration, citizen participation and experimental water policies are important tools for co-ordinating water policy at the territorial level and between levels of government.
- OECD experience showed that no governance tool is a panacea that can offer a comprehensive solution towards integrated water policy, and that there is no systematic, one-to-one correlation between tools and gaps. Integrated water policy requires the adoption of several governance mechanisms. Coherence between them is also needed, as well as consistency with institutional organisation at local and national levels.

The report helped design categories of countries that have similar institutional organisation in the water sector, and still face similar water governance challenges, even though they have adopted specific governance instruments. This is a preliminary step to a

possible “impact assessment” of existing tools. In order to be relevant and credible, this must be conducted within a policy dialogue, at the scale of a given territorial (national, rural, urban, basin or cross-border) area, and take into account current, past and future reforms in the water sector, although the performance of public governance is difficult to evaluate *per se*.

Lessons from OECD experience in the governance of water policy

A holistic approach is needed to deal with multi-level governance gaps. The vertical and horizontal co-ordination challenges identified in this report are interrelated and can potentially exacerbate each other. For example, sectoral fragmentation (*policy gap*) is likely to aggravate information asymmetry (*information gap*), undermine capacity-building (*capacity gap*), encourage diverging goals (*objective gap*) to the detriment of performance for end users (*accountability gap*), and over-extend increasingly limited financial resources (*funding gap*). Each governance gap has externalities on other fields and therefore needs to be identified, analysed and resolved within the broader multi-level governance framework.

Similarly, governance instruments for co-ordination at central and vertical levels need to be assessed according to a broader perspective that considers possible synergies and spill-over effects. A large number of co-ordination tools adopted in a given country is not necessarily an indicator of “good governance”. Such tools may overlap and their effects may be neutralised if they are not coherent and their goals are not aligned. For instance, setting up a line ministry to lead water policy at the central government level is compatible with high-level political leadership across policy fields (*e.g.* water, agriculture, energy, infrastructure, etc.) advise and recommend action. However, if their respective roles and constituencies are not clearly defined, the decision-making process can be compromised. At a vertical level, performance indicators can be set up to bridge the accountability and capacity gaps and ensure transparency. Likewise, encouraging the systematic monitoring of water policies has to be clearly thought through, using the necessary databases and systems. This often means making such indicators available to all levels of government and to the public. In other words, many complementarities between governance tools need to be taken into account so as to make the most of their interaction.

There is no “one size fits all” model for enhancing public governance in the water sector and overcoming institutional obstacles to implementation. A single governance tool can help bridge several gaps, and conversely, a single gap may require multiple tools. Several governance instruments are often needed to overcome identified obstacles. For instance, on the one hand, adopting contracts between levels of government can be a response to objective, funding, capacity and policy gaps. On the other hand, to resolve the administrative gap, a government may need, in addition to a shift towards river basin management, to enhance citizen participation and intermunicipal collaboration, collect information at basin level, and offer financial incentives to local authorities. A policy mix of several tools is often called for.

Diagnosis of remaining water governance challenges in OECD countries, despite the use of various governance mechanisms, is a necessary, but preliminary, step in assessing how far the governance approach adopted by a given country has succeeded in bridging identified gaps. Given the challenge of confounding variables that limit how far it is possible to evaluate the effectiveness of water governance arrangements, a clear research design would carefully isolate the decision-making protocols and the beneficiaries of the water governance regime. Such an evaluation – which this report does not undertake –

would need both a set of analytical strategies to assess the level and effectiveness of co-ordination mechanisms *and* a normative assessment that provided parameters for analysing the co-ordination mechanisms that should exist.

Respondents ranked the following governance challenges as the most important, in the OECD 2010 Survey on Water Governance.

Table 5.1. Remaining governance challenges in OECD countries' water policy

Country or region	Most important water governance challenges, according to respondents
Australia	• Allocation of water resources • Mismatch between administrative and hydrological boundaries
Belgium (Flanders)	• Enforcement of environmental norms • Economic regulation • Horizontal co-ordination across ministries • Vertical co-ordination between levels of governments • Horizontal co-ordination between sub-national actors
Canada	• Mismatch between hydrological and administrative boundaries • Allocation of water resources • Horizontal co-ordination across ministries • Vertical co-ordination between levels of government • Horizontal co-ordination across sub-national actors
Chile	• Local and regional government capacity • Economic regulation • Limited citizen participation • Managing the specificity of rural areas • Managing the specificities of urban/metropolitan areas • Managing geographically specific areas
France	• Allocation of water resources • Enforcement of environmental norms • Economic regulation • Horizontal co-ordination between sub-national actors
Greece	• Local and regional government capacity • Economic regulation • Limited citizen participation
Israel	• Mismatch between hydrological and administrative boundaries • Enforcement of environmental norms • Economic regulation • Managing geographically specific areas
Italy	• Mismatch between hydrological and administrative boundaries • Economic regulation • Horizontal co-ordination between sub-national actors • Managing the specificities of urban/metropolitan areas • Managing geographically specific areas
Korea	• Mismatch between hydrological and administrative boundaries • Allocation of water resources • Economic regulation • Horizontal co-ordination across ministries • Vertical co-ordination between levels of government
Mexico	• Allocation of water resources • Local and regional government capacity • Enforcement of environmental norms • Economic regulation • Limited citizen participation
Netherlands	• Mismatch between hydrological and administrative boundaries • Allocation of water resources • Limited citizen participation • Horizontal co-ordination across ministries • Vertical co-ordination between levels of government • Horizontal co-ordination between sub-national actors • Managing the specificities of urban/metropolitan areas

Table 5.1. **Remaining governance challenges in OECD countries' water policy** (cont.)

Country or region	Most important water governance challenges, according to respondents
New Zealand	• Allocation of water resources • Managing the specificity of rural areas
Portugal	• Allocation of water resources • Economic regulation (namely the consolidation of the new economic and financial framework) • Limited citizen participation • Vertical co-ordination between levels of government • Horizontal co-ordination between sub-national actors • Sub-national level capacity • Reinforcement of the new water governance model
Spain	• Mismatch between hydrological and political boundaries • Enforcement of environmental norms • Economic regulation • Vertical co-ordination between levels of government • Managing the specificity of rural areas • Allocation of water resources
United Kingdom	• Allocation of water resources • Local and regional government capacity • Mismatch between hydrological and administrative boundaries • Enforcement of environmental norms • Economic regulation
United States	• Vertical co-ordination between levels of government • Horizontal co-ordination between sub-national actors • Managing the specificity of rural areas • Allocation of water resources • Managing the specificities of urban/metropolitan areas

Source: OECD Survey on Water Governance (2010).

The overview of remaining challenges in OECD countries confirms the need to combine several tools to overcome governance obstacles in water policy, by approaching each case individually and assessing the performance of each governance tool in solving the challenges identified. For example, the mismatch between hydrological and administrative boundaries is not necessarily solved by the creation of a river basin organisation, as the experience of Italy and Australia shows. The creation of shared databases and water information systems can help bridge the information gap, but may be not enough. In Australia for instance, more than 400 actors are in charge of collecting information and connect to the Bureau of Meteorology, which creates overlaps, incoherence and gaps for decision makers. Interministerial bodies responded to the policy gap in some countries (France, Mexico, Australia) but not in others (Belgium, Canada, Greece, Netherlands). Financial transfers across levels of government helped to compensate for the insufficient revenues undermining implementation of water policy at local and regional levels in some countries but not in others (Korea, Mexico).

The construction of a new architecture of water governance requires additional work for better governance in water reforms and better reform in water governance. It would be helpful to design a comprehensive management model based on systems theory, to facilitate the exchange of knowledge (intersectoral science and technology), learning, participation, and continuous adaptation of the water management process for decision-making would be helpful. This would allow including further parameters when comparing different processes of governance that apply in different countries and progress in addressing the uncertainties and decisions at any level.

Envisioning long-term strategies: preliminary guidelines for effective management of multi-level governance

These preliminary guidelines aim to provide a framework for diagnosing and responding to multi-level governance challenges in water policy. They are intended to serve as a tool for policy makers to foster effective, equitable and sustainable water reforms. They are interdependent, should not be considered in isolation and could be further developed in the framework of case studies and in-depth policy dialogues in OECD and non-OECD countries.

Preliminary guidelines for effective management of multi-level governance

1. **Diagnose multi-level governance gaps in water policy making across ministries and public agencies, between levels of government and across sub-national actors.** This will help clearly define roles and responsibilities of public authorities. Beyond the *what*, policy makers need to focus on the *how*, which requires the identification of possible overlaps in the allocation of roles and responsibilities, asymmetries of information, sectoral fragmentation of water-related tasks, insufficient knowledge, unstable or insufficient revenues at all levels of government, possibly conflicting objectives, as well as accountability concerns undermining the transparency of water policy making. The *Multi-level Governance Framework*, organised around seven “gaps”, can be a useful diagnostic tool for policy makers in this exercise.
2. **Involve sub-national governments in designing water policy, beyond their roles as “implementers” and allocate human and financial resources in line with responsibilities of authorities’.** Regional and local actors are already key players in OECD countries’ water policy. But they can also play a crucial role in identifying policy complementarities and synergies at the local level. They are the most likely to understand local needs, territorial challenges and engage relevant interlocutors. Whenever possible, discretion should be accorded to the local level for implementation of integrated management. Only when solutions cannot be realised at this level should consideration be given to the next level in the hierarchy, i.e. the regional, state or national level. The need often arises to co-ordinate planning and management between agencies and areas at the national or international level. Caution is also necessary with the process of “total” decentralisation of water governance. Basin-level management, for example, may require national or international governance to avoid inequities in water allocation within a water basin and also ensure that the public good aspects and values of water are given sufficient recognition. Strategic planning and incentives for policy coherence at all levels can actually limit local “capture” and specific “vested” interests may compromise integrated policy.
3. **Adopt horizontal governance tools to foster coherence across water-related policy areas and enhance inter-institutional co-operation across ministries and public agencies.** Coherent water policy requires platforms for dialogue and exchanges between policy makers at central government level. The process of integration should be ensured through the establishment of highly visible interministerial and inter-departmental councils and committees, with responsibility to ensure substantive dialogue and co-ordination. These bodies could also be responsible for final negotiation and bargaining, together with performance evaluation on the achievement of integrated management of natural resources. They need to be designed coherently, be consistent with the

institutional organisation of water policy, and offer high-level political commitment for ambitious water policy reforms.

4. **Create, update and harmonise water information systems and databases for sharing water policy needs at basin, country and international levels.** Assessing the effectiveness of water information systems and databases in bridging the information gap is a difficult task. It requires conducting a cost-benefit analysis at local, regional, national and international levels, to determine how current water information and data are collected and used by policy makers, as well as the costs and benefits of collecting, analysing and communicating this information. Increased efforts are needed to communicate messages from the reporting and analysis of water data to policy advisors and the wider public. That also implies assessing institutional obstacles and opportunities by identifying areas of institutional overlap and synergies in water data collection; mobilising local stakeholders when designing water information systems; fostering co-ordination between data producers and users; and encouraging multi-disciplinary approaches.
5. **Encourage performance measurement to evaluate and monitor the outcomes of water policy at all levels of government.** The diversity of tools in place shows that there is no optimal design for an indicator-based performance measurement system in the water sector. Its development should be a collaborative effort between the national and sub-national level and agencies, and the information it yields ought to cover inputs, processes and outputs that are relevant for ongoing activities. For such information to be used in an effective fashion, clear objectives for the data need to be established and proper indicators selected. Systems that can generate, validate and distribute the data are needed; the information must be used in an appropriate and timely fashion; incentive mechanisms can be considered to encourage actors to follow a particular course of action; and strategies for how the performance information will be used – whether “benchmarking” or “bench-learning” – should be planned for.
6. **Respond to the fragmentation of water policy at the sub-national level by facilitating co-ordination across sub-national actors and between levels of government.** River basin management, intermunicipal co-operation and co-ordinated bodies at local and regional levels can help bridge co-ordination gaps, ensure a holistic and hydrological approach to water policy and create critical mass for water investment at the territorial level. Coherence involves both water resources and water uses (for urban or rural areas) for an integrated hydro-institutional system throughout the water cycle. Such tools need to be backed up by scientific, institutional, economic and financial information, a clear definition of their roles and functions, strong advocacy for their effective use as well as a co-ordination of their actions when they are used simultaneously.
7. **Foster capacity-building at all levels of government.** This implies combining investment in physical water and sanitation “hard” infrastructure with the provision of “soft” infrastructure, which is essentially the institutions upon which water outcomes rely. The development of skills, technical expertise and knowledge and the availability of staff and time are preconditions for effective governance of water policy. Often, policy makers focus on the construction and maintenance of water networks, offering a “technical” response to water challenges. This has proved to be insufficient to face climate change, risk management (floods, droughts) and cross-border issues in the water sector. Institutional strengthening and capacity-building at all levels is crucial for effective

water policies in response to the challenges of the 21st century. In the context of fiscal and budgetary constraints, such capacity building is a prerequisite for channelling limited financial resources most effectively, in both developed and developing countries.

8. **Encourage a more open and inclusive approach to water policy making through public participation in water policy design and implementation.** Public participation should be encouraged both in the planning process and in critical reviews of implementation, and would highlight areas where further integration is required. Broader involvement of citizens, interested parties and non-governmental organisations (NGOs) is also vital for successful integrated water policy design and implementation. Widening public participation is a means to increase transparency of environmental policies and encourage citizens' compliance with it. Transparency in establishing and implementing goals and reporting standards is an important way to empower citizens and influence the direction of environmental protection.*
9. **Assess the effectiveness and adequacy of existing governance instruments for co-ordinating water policy at horizontal and vertical levels.** To be relevant and credible, the assessment of water governance arrangements has to be conducted within a policy dialogue, at the scale of a given territorial area (national, rural, urban, basin or cross-border), and in the light of current, past and future reforms in the water sector.

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* For background information on citizens' engagement in public policies, see OECD (2009), *Focus on Citizens: Public Engagement for Better Policy and Services*, Studies on Public Engagement and OECD, *Innovation and Public Services: Working Together with Citizens for Better Outcomes*, forthcoming.

ANNEX 5.A1

Table 5.A1.1. **Country participants to the OECD Survey on water governance**

Country	Respondent to the Survey
Australia	Department of Environment, Water, Heritage and the Arts
Belgium (Flemish Region)	Flemish Environment Agency (VMM – <i>Vlaamse Milieumaatschappij</i>)
Belgium (Wallonia)	<i>Service public de Wallonie</i> (SPW), DG03 <i>Direction générale opérationnelle "Agriculture, Ressources Naturelles et Environnement"</i>
Canada	Environment Canada
Chile	<i>Dirección de Obras Hidráulicas</i> – Ministry of Public Works
France	<i>Ministère de l'Écologie, de l'Énergie, du Développement durable et de la Mer</i>
France	<i>Agence de l'eau Rhône Méditerranée Corse</i> (river basin authority)
Greece	Special Secretariat for Water
Israel	Israeli Water Authority
Italy	Ministry of Economic Development
Italy	<i>Acqua Toscana</i>
Japan	Water Resources Department, Ministry of Land, Infrastructure, Transport and Tourism
Republic of Korea	Ministry of Land, Transport and Maritime Affairs
Mexico	<i>Comisión Nacional del Agua</i> (National Water Commission)
Netherlands	Union of Water Boards and Ministry of Transport, Public Works and Water Management
New Zealand	Ministry of Agriculture (response prepared in conjunction with the Ministry for the Environment)
New Zealand	Union of Local Governments, New Zealand
Portugal	<i>Entidade Reguladora dos Serviços de Águas e Resíduos</i> (ERSAR, regulatory agency)
Portugal	<i>Administração de Região Hidrográfica do Norte</i> I.P. (ARH do Norte, river basin authority)
Spain	<i>Ministerio de Medio Ambiente y Medio Rural y Marino</i>
Spain	<i>Confederación Hidrográfica del Ebro</i> (river basin authority)
United Kingdom	Environment Agency (England and Wales)
United States	Colorado Department of Natural Resources

Chapter 6

Country Profiles

This Chapter presents a series of 18¹ OECD “country or region profiles”² with a uniform layout for ease of comparison. It is based on the responses collected in the framework of the OECD 2010 Survey on Water Governance.

Each profile is divided into five sections, which provide, in the following order:

- An “institutional mapping” of the allocation of roles and responsibilities in water policy design, regulation and implementation at central government level.
- An overview of co-ordination challenges and instruments across ministries and public agencies.
- An “institutional mapping” of the allocation of roles and responsibilities in water policy design, regulation and implementation at sub-national (local and regional) level.
- An overview of co-ordination challenges and instruments across levels of government and between local actors.
- An overview of remaining multi-level governance challenges, based on countries self assessment in the OECD 2010 Survey on Water Governance.

1. There is a total of 18 “profiles” for the 17 countries surveyed. As water is a regional issue in Belgium, two separate profiles were designed for the region of Flanders and Wallonia. The case of Brussels Capital City is not covered in the report.
2. These profiles are exclusively based on data collected from countries’ responses to the OECD 2010 Water Governance Survey. They therefore consist of an inventory and “self-assessment” by countries themselves, of their own institutional organisation, governance challenges and co-ordination and capacity building tools in the water sector.

AUSTRALIA

Acronyms and abbreviations

ACCC	Australian Competition and Consumer Commission
BOM	Bureau of Meteorology
DEWHA	Australian Government Department of the Environment, Water, Heritage and the Arts
MDBA	Murray-Darling Basin Authority
NWC	National Water Commission

Institutional mapping of water policy at central government level: Allocation of roles across ministries and public agencies

Design and implementation of water policies

Roles	Areas	Water resources	Water services			
			Water supply			Wastewater treatment
			Domestic	Agriculture	Industry	
Strategy, priority setting, and planning (including infrastructure)		Murray-Darling Basin Authority (MDBA) Australian Government Department of the Environment, Water, Heritage and the Arts (DEWHA)	MDBA	MDBA	MDBA	
Policy-making and implementation		MDBA DEWHA	MDBA DEWHA	MDBA DEWHA	MDBA DEWHA	DEWHA
Information, monitoring and evaluation		MDBA Bureau of Meteorology (BOM) National Water Commission (NWC)	MDBA National Water Commission	MDBA	MDBA National Water Commission	
Stakeholders engagement (citizens' awareness, etc.)		MDBA DEWHA	MDBA	MDBA	MDBA	

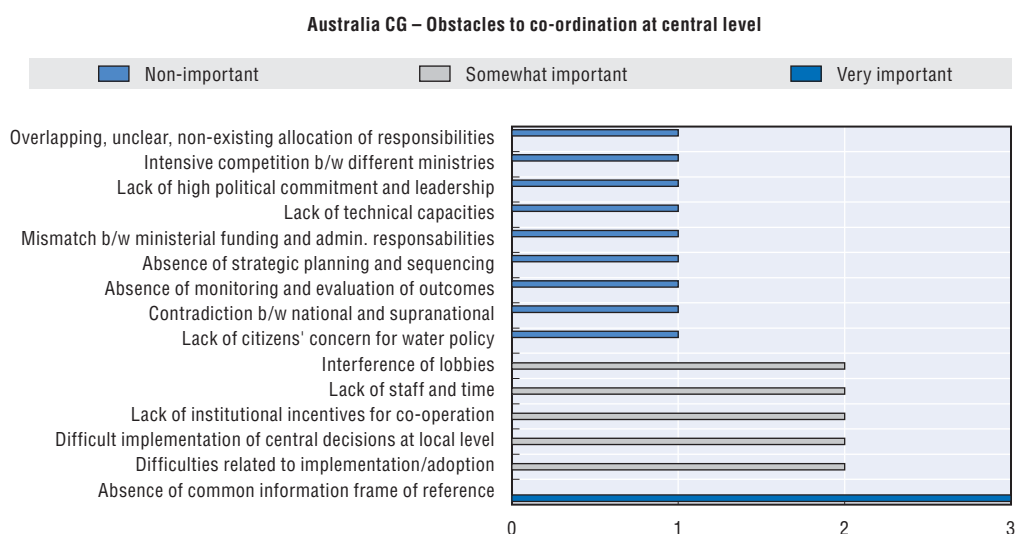
Note: The National Water Commission documented water governance arrangements in Australia in 2009. For more information on this, see: www.nwc.gov.au/www/html/1112-water-governance.asp.

Institutional mapping for quality standards and regulation

Roles	Areas	Water resources	Water services			Wastewater treatment
			Water supply			
			Domestic	Agriculture	Industry	
Allocation of uses		MDBA	MDBA	MDBA		
Quality standards		MDBA	MDBA	MDBA		
Compliance of service delivery commitment		MDBA	MDBA	MDBA		
Economic regulation (tariffs, etc.)		Australian Competition and Consumer Commission (ACCC) MDBA	MDBA ACCC MDBA	MDBA ACCC MDBA		
Environmental regulation (enforcement of norms, etc.)		MDBA DEWHA (EPBC Act, etc.)	MDBA	MDBA	MDBA	
Water information		BOM				

Co-ordination of water policy making across ministries and public agencies at central government level

Obstacles to horizontal co-ordination in water policy making



Existing mechanisms for co-ordinating the action across ministries and public agencies

Existing co-ordination mechanism across ministries/public agencies	Yes	No	Details (name, website, contact detail, description, examples, etc.)
A ministry of water		X	
A line ministry	X		DEWHA: www.environment.gov.au
A central agency for water related issues		X	
An <i>ad hoc</i> high level structure (National Council, etc.)			Council of Australian Governments (COAG) (see Q6B)
An inter-ministerial body (committee, commission, etc.)	X		Natural Resource Management Ministerial Council: www.mincos.gov.au/about_nrmmc - The NRMCM develops policies and strategies for national approaches to the conservation, sustainable use and management of Australia's land, water, vegetation and biological resources - The NRMCM also oversees the development and implementation of national natural resource management programs - The NRWMS has oversight of the implementation of nationally agreed water policy MDB Ministerial Council: www.mdba.gov.au - The MDB Ministerial Council promotes and co-ordinates effective planning and management for the equitable, efficient and sustainable use of the land, water and environment resources of the Murray-Darling Basin Environment Protection and Heritage Council: www.ephc.gov.au - The EPHC is responsible for ensuring the protection of the environment and heritage (natural, historic and Indigenous heritage) of Australia and New Zealand. It has a limited role in water governance, with the primary focus being water quality National Health and Medical Research Council: www.nhmrc.gov.au - The National Health and Medical Research Council is Australia's peak body for supporting health and medical research and for developing health advice for the Australian community, health professionals and governments - It has a role in water quality and health standards, together with the EPHC
An inter-agency programme	X		
An inter-ministerial mechanism for addressing territorial water concerns	X		Murray Darling Basin Ministerial Council, but if the "territorial" refers to waters across country boundaries – then MDBMC is not relevant

Institutional mapping of water policy roles and responsibilities at sub-national level: Allocation of roles across local and regional authorities

Allocation of roles and responsibilities in water policy design and implementation at territorial level

Areas	Water resources	Water services			Wastewater treatment
		Water supply			
		Domestic	Agriculture	Industry	
Actors at sub-national level					
Municipalities		X		X	X
Regions (provinces, states in federal countries, autonomous regions, cantons, etc.)	X		X	X	
Inter-municipal bodies					
Water specific bodies (e.g. elected water boards, etc.)	X	X	X	X	X
River basin organisations	X				
Other (specify)					

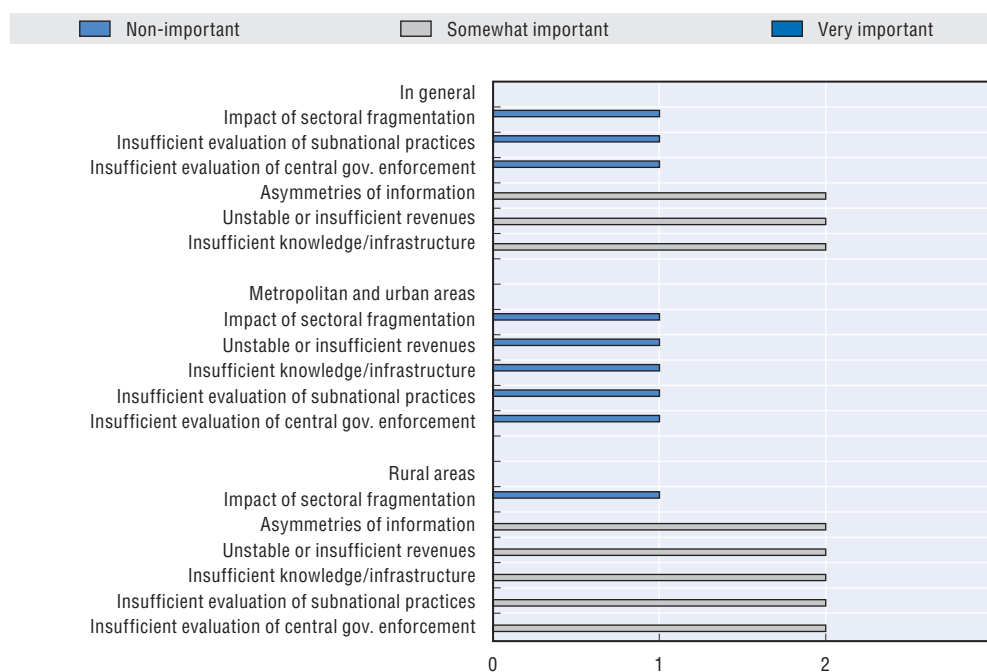
Allocation of roles and responsibilities in water regulation (rule production and enforcement)

Roles	Areas	Water resources	Water services		
			Water supply		Wastewater treatment
			Domestic	Agriculture	
Allocation of uses		Regions	Regions	Regions	Regions
Quality standards		Regions	Regions and Municipalities (e.g. monitoring water quality against standards)	Regions	Regions and Municipalities (e.g. monitoring wastewater treatment and disposal against standards)
Compliance of service delivery commitment		Regions	Regions (rules production and enforcement) and Municipalities (enforcement)	Regions	Regions (rules production and enforcement) and Municipalities (enforcement)
Economic regulation (tariffs, etc.)		Regions	Regions	Regions	Regions
Environmental regulation (enforcement of norms, etc.)		Regions	Regions	Regions	Regions
Control at sub-national level of national regulations' enforcement		Regions	Regions	Regions	Regions
Other (specify)					

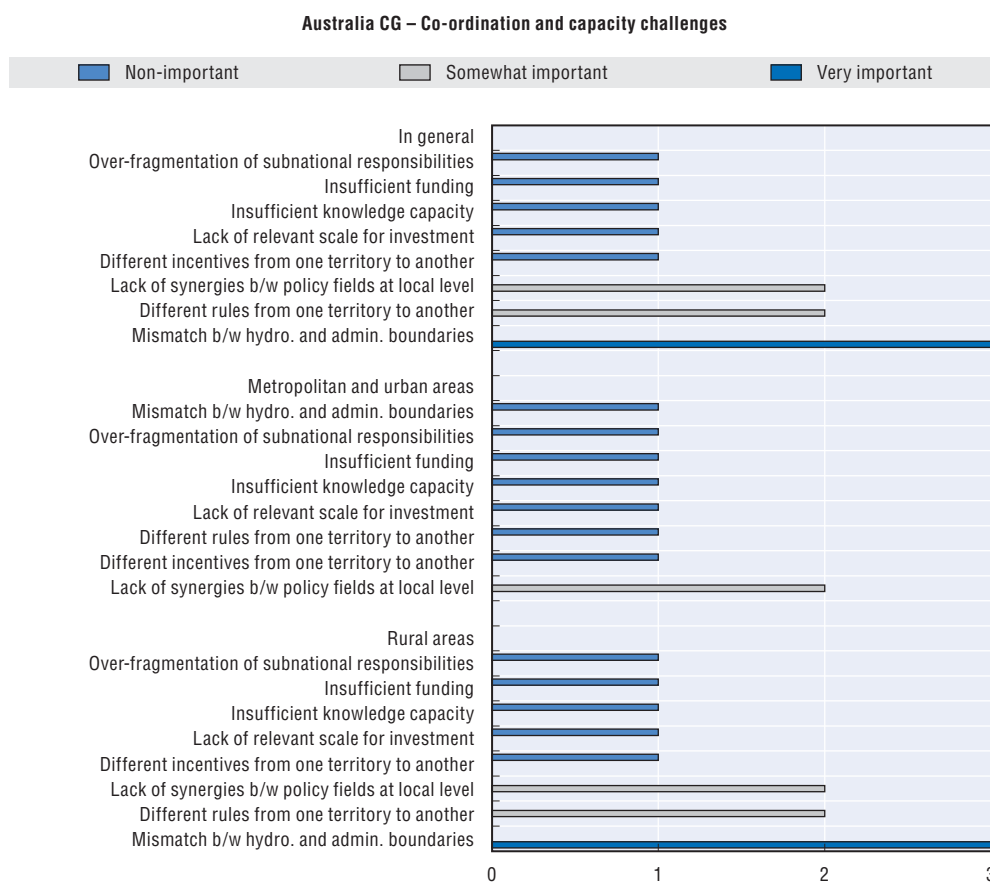
Co-ordination of water policy making between levels of government and across local actors

Obstacles to vertical co-ordination in water policy making

Australia CG – Obstacles for vertical co-ordination



Obstacles to capacity building and co-ordination at territorial level



Existing mechanisms for co-ordinating water policy between levels of government and at territorial level

Existing mechanism for vertical co-ordination and territorial effectiveness in water policy	Yes	No	Details (contact information, website, etc.)
River basin organisations/agencies	X		MDBA
Regulations for sharing roles between actors	X		Water Act 2007
Co-ordination agency or commission	X		MDBA, Basin Officials Committee (BOC), COAG, NRMMC, National Water Commission: www.nwc.gov.au
Contractual arrangements (between central and local governments, central and regional governments, regional and local governments)	X		• MDB Agreement (Part 1A Water Act 2007) • NWI, www.nwc.gov.au
Intermediate bodies or actors (e.g. state territorial representatives)	X		States and Territories
Financial transfers or incentives	X		MOU, Grants, Program funding and specific agreements
Performance indicators	X		MDB Agreement (especially the Sustainable Diversion Limits and Basin Salinity Management Strategy): www.mdba.gov.au
Shared databases	X		Bureau of Meteorology: www.bom.gov.au/water/index.shtml
Sectoral conferences between central and sub-national water players	X		NRMMC, EPHC, MDBMC
Multi-sectoral conferences	X		COAG
Consultation of private stakeholders (profit and non-profit actors)	X		Basin Community Committee: www.mdba.gov.au

Specific focus on selected mechanisms

River basin organisations: Constituencies, missions, monitoring, financing

Constituencies	
Type of actor or institution	Name
Central government ministries or public agencies	DEWHA
Local and regional authorities	State governments
Private companies/actors	The Bureau of Meteorology regulations also cover private companies
Citizens and NGOs	Basin Community Committee
Missions	
Functions	Details
Monitoring	MDBA, Water Act 2007
Co-ordination	MDBA, Water Act 2007
Regulation	MDBA, Water Act 2007
Data collection	BOM and MDBA, Water Act 2007
Pollution prevention	MDBA, Water Act 2007
Harmonisation of water policies at basin level	MDBA, Water Act 2007
Allocation of uses	MDBA, Water Act 2007
Planning	MDBA, Water Act 2007
Financing	MDBA, Water Act 2007
Monitoring	
All agencies report to the Australian Government Minister for Water	
Financing	
Type	Details
Autonomous budget	Consolidated revenue from the Commonwealth
Grants from sub-national governments	MDBA gets funding from State governments for specific functions it conducts on their behalf

Tools to manage the interface between actors at sub-national level

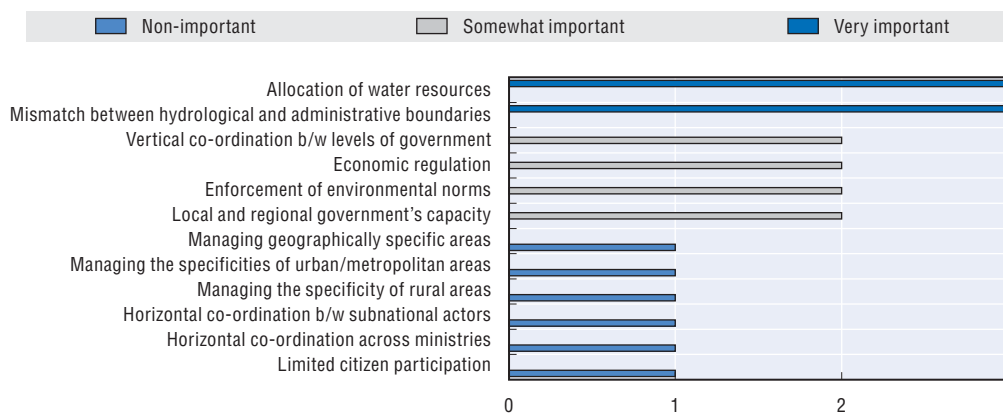
Existing mechanisms for co-ordination across different water actors at sub-national level	Yes	No	Details (name, example, contact information, website, capacity issues addressed, etc.)
Inter-municipal collaboration	X		MDBA, Lake Eyre Basin Ministerial Forum (LEBMF): www.lebmf.gov.au/forum/index.html
Inter-municipal specific body	X		
Specific incentives from central/regional government (in terms of rules, rewards and sanction mechanisms, budget allocation, etc.)	X		
Historical rules and traditions	X		
Specific mechanisms for conflict resolution	X		
Informal co-operation around projects	X		
Joint financing	X		
Metropolitan or regional water districts	X		
Other (specify)			

Tools for capacity building at sub-national level

Type of mechanism	Yes	No	n/a	Details (name, example, contact information, website, capacity issues addressed, etc.)
Broad governance mechanisms				
Collaboration with the private sector (know-how transfer, concession contracts, BOTs, etc.)				
Financial incentives (specify from whom and for what)	X			Water For the Future program Grants from the Australian Government to State Governments, regional councils and individuals for irrigation efficiency improvements and water planning
Performance indicators and targets holding local governments accountable	X			Health Standards
Citizens' participation				
Involvement of civil society organisations				
Databases (sharing information)	X			Bureau of Meteorology: www.bom.gov.au/water/index.shtml
Historical arrangements (water courts, etc.)				
Other (specify)				
Management mechanisms				
Training – Workshops – Conferences	X			
Specific performance monitoring mechanism for staff (teams or individuals)				
Other (specify)				

Final assessment of remaining challenges

Australia CG – Main challenges in water policy making



BELGIUM (FLANDERS)

Acronyms and abbreviations

DMPW	Flemish Government, Department Mobility and Public Works
HIC	Hydrologic Information Centre
SNV	Scheepvaart NV
SVW	<i>Samenwerking Vlaams Water</i> (Flemish Water Association)
VMM	Flemish Environment Agency

Institutional mapping of water policy roles and responsibilities at central government level: Allocation of roles across ministries and public agencies

Design and implementation of water policies

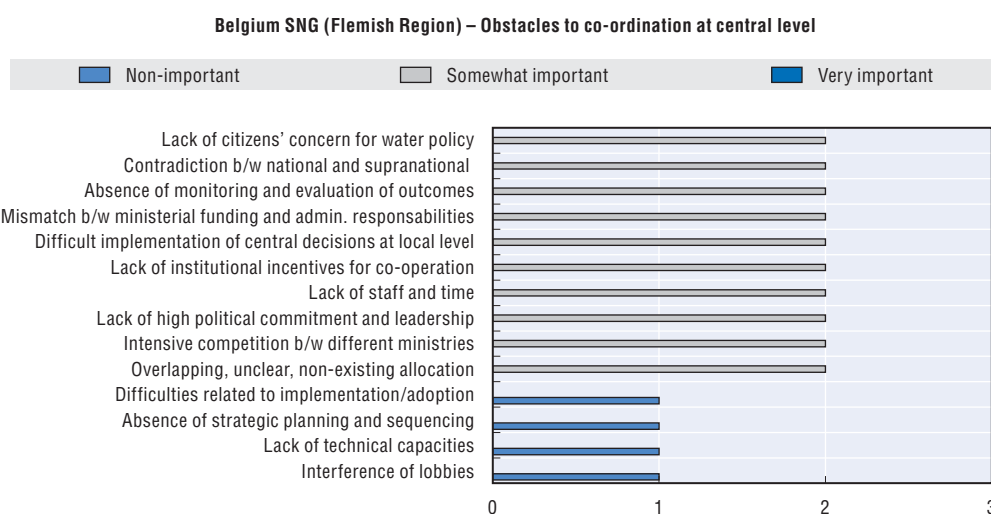
Roles	Areas	Water resources	Water services		
			Water supply		Wastewater treatment
			Domestic	Agriculture	
Strategy, priority setting and planning (including infrastructure)		• <i>Waterways</i>: Waterways and Sea Channel NV (W&Z), Scheepvaart NV; Flemish Government – Department Mobility and Public Works • <i>Non-navigable waters</i>: Flemish Environment Agency (VMM)			Flemish Environment Agency (VMM)
Policy making and implementation		• <i>Waterways</i>: Waterways and Sea Channel NV (W&Z), Scheepvaart NV; Flemish Government – Department Mobility and Public Works • <i>Non-navigable waters</i>: Flemish Environment Agency (VMM)	Flemish Environment Agency (VMM)	Flemish Environment Agency (VMM)	
Information, monitoring and evaluation		• <i>Waterways</i>: Flemish Government – Department Mobility and Public Works – Hydrologic Information Centre (HIC) • <i>Non-navigable waters</i>: Water quantity and water quality: Flemish Environment Agency (VMM)	Drinking water companies	Flemish Environment Agency (VMM)	
Stakeholders engagement (citizens' awareness, etc.)			Flemish Water Association (SVW, <i>Samenwerking Vlaams Water</i>)		

Institutional mapping for quality standards and regulation

No competencies at federal level.

Co-ordination of water policy making across ministries and public agencies at central government level

Obstacles to horizontal co-ordination in water policy making



Existing mechanisms for co-ordinating the action across ministries and public agencies

Existing co-ordination mechanism across ministries/public agencies	Yes	No	Details (name, website, contact detail, description, examples, etc.)
A ministry of water		X	
A line ministry	X		
A central agency for water related issues	X		For marine waters: Royal Belgian Institute of Natural Sciences, department MUMM (Management Unit of the North Sea Mathematical Models: BMM: <i>Beheerseenheid Mathematisch Model van de Noordzee</i>; UGMM: <i>L'Unité de Gestion du Modèle Mathématique de la mer du Nord et de l'estuaire de l'Escaut</i>) www.mumm.ac.be/EN/sitemap.php
An inter-ministerial body (committee, commission, etc.)			
An inter-agency programme			
A co-ordination group of experts	X		The Inter-regional Committee on Waterways
An inter-ministerial mechanism for addressing territorial water concerns	X		CCIEP (Co-ordinating Committee for International Environmental Policy)

Institutional mapping of water policy roles and responsibilities at sub-national level: Allocation of roles across local and regional authorities

Allocation of roles and responsibilities in water policy design and implementation at territorial level

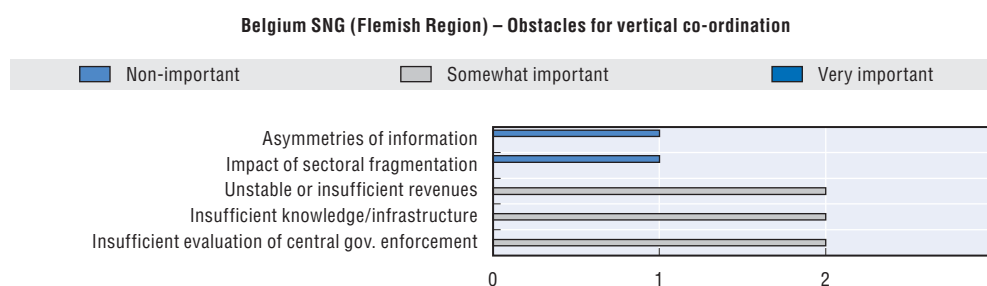
Actors at sub-national level	Areas	Water resources	Water services			Wastewater treatment
			Water supply			
			Domestic	Agriculture	Industry	
Municipalities		Unnavigable watercourses of the 3rd category: Municipalities	Most of the municipalities have delegated the responsibility for water supply and sanitation to regional or inter-municipal utilities	Most of the municipalities have delegated the responsibility for water supply and sanitation to regional or inter-municipal utilities	Most of the municipalities have delegated the responsibility for water supply and sanitation to regional or inter-municipal utilities	Municipalities for collection waste water, small-scale waste water treatment plants and individual treatment of waste water systems (IBA-systems)
Regions (provinces, states in federal countries, autonomous regions, cantons, etc.)		<i>Unnavigable watercourses of the 2nd category:</i> provinces <i>Unnavigable watercourses of the 1st category and groundwater:</i> Flemish Environment Agency (VMM) <i>Navigable waterways:</i> department Mobility and Public Works + two public agencies: Waterwegen en Zeekanaal NV (in the west and middle of Flanders) and NV De Scheepvaart (in the east of Flanders) <i>Integrated water policy:</i> the Co-ordination Committee on Integrated Water Policy (CIW)	Co-operation Flemish Water (<i>Samenwerking Vlaams Water, SVW</i>) Covering the drinking water production and distribution sector, with <i>i.a.</i> the Flemish Agency for Drinking Water supply (VMW)	Flemish Agency for Drinking Water supply Co-operation Flemish Water (<i>Samenwerking Vlaams Water, SVW</i>): same remark	Flemish Agency for Drinking Water supply Co-operation Flemish Water (<i>Samenwerking Vlaams Water, SVW</i>): same remark	Flemish Environment Agency (VMM)
Inter-municipal bodies			Inter-municipal drinking water companies	Inter-municipal drinking water companies	Inter-municipal drinking water companies	Inter-municipal waste water treatment companies
Water specific bodies (<i>e.g.</i> elected water boards, etc.)				Polders and Waterings		
River basin organisations		<i>In each of the 11 sub-basins:</i> a sub-basin executive, a sub-basin secretary and a sub-basin council				
Other (specify)						AQUAFIN NV (PPC for operational WWT-services) is the regional wastewater treatment company in Flanders

Allocation of roles and responsibilities in water regulation (rule production and enforcement)

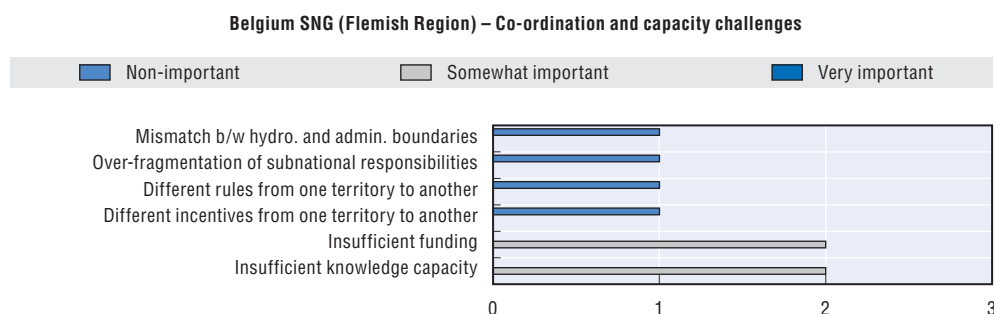
Roles	Areas	Water resources	Water services			
			Water supply			Wastewater treatment
			Domestic	Agriculture	Industry	
Allocation of uses		Authorities responsible for water management, <i>i.e.</i> municipalities, provinces, Flemish Environment Agency, department Mobility and Public Works, Waterwegen en Zeekanaal NV, NV De Scheepvaart				
Quality standards		Regions (Ministry of Environment and Flemish Environment Agency)	Flemish Region: the Flemish Environment Agency supervises the quality of water intended for human consumption			Flemish Region: the Flemish Environment Agency is responsible for the ecological supervision of waste water treatment
Compliance of service delivery commitment			Flemish Environment Agency (VMM) competent as drinking water regulator			
Economic regulation (tariffs, etc.)			Regions (Ministry of Environment and Flemish Environment Agency)			Flemish Region: the Flemish Environment Agency is responsible for the economic supervision of waste water treatment
Environmental regulation (enforcement of norms, etc.)		Regions (Ministry of Environment and Flemish Environment Agency)				Regions (Ministry of Environment – Dep. Environmental Inspection/Flemish Environment Agency)
Control at sub-national level of national regulations' enforcement						
Other (specify)						

Co-ordination of water policy making between levels of government and across local actors

Obstacles to vertical co-ordination in water policy making



Obstacles to capacity building and co-ordination at territorial level



Existing mechanisms for co-ordinating water policy between levels of government and at territorial level

Existing mechanism for vertical co-ordination and territorial effectiveness in water policy	Yes	No	n/a	Details (contact information, website, etc.)
River basin organisations/agencies	X			International Scheldt Commission (ISC) International Meuse Commission (IMC)
Regulations for sharing roles between actors				
Co-ordination agency or commission	X			CCIEP
Contractual arrangements (between central and local governments, central and regional governments, regional and local governments)				
Intermediate bodies or actors (e.g. state territorial representatives)				
Financial transfers or incentives				
Performance indicators				
Shared databases				
Sectoral conferences between central and sub-national water players				
Multi-sectoral conferences				
Consultation of private stakeholders (profit and non-profit actors)				
Other (specify)				

Specific focus on selected mechanisms

River basin organisations: Constituencies, missions, monitoring, financing

Constituencies			
Type of actor or institution	Name		
Central government ministries or public agencies	Administrations and entities of the Flemish region in the CIW, which can be considered as the “basin agency” for the river basin districts of Scheldt and Meuse: • chair: Flemish Environment Agency (VMM) • environment and Nature: Ministerial department of Land, Nature and Energy (LNE) and Agency for Nature and Forestry (ANB) • transport: Ministerial department of Mobility and Public Works (MOW) and W&Z • spatial Planning: Ministerial department of Spatial Planning, Housing Policy and Heritage (RWO) • agriculture: Ministerial department of Agriculture and Fisheries (LV) • economy: Ministerial department of Economy, Science and Innovation (EWI) Administrations and entities of the Flemish region in 11 “sub-basin agencies”: • environment and Nature: Ministerial department of Land, Nature and Energy (LNE) and Agency for Nature and Forestry (ANB) • transport: Ministerial department of Mobility and Public Works (MOW) and W&Z • spatial Planning: Ministerial department of Spatial Planning, Housing Policy and Heritage (RWO) • agriculture: Ministerial department of Agriculture and Fisheries (LV) • economy: Ministerial department of Economy, Science and Innovation (EWI)		
Local and regional authorities	In the CIW, which can be considered as the “basin agency” for the river basin districts of Scheldt and Meuse: • the umbrella organisation of the provinces • the umbrella organisation of the cities and municipalities • the umbrella organisation of the polders and drainage authorities In the 11 “sub-basin agencies”: • representatives of each sub-sub-basin, that is a part of the basin (can be a representative of a city, a municipality, a polder or a drainage authority in the sub-sub-basin)		
Private companies/actors	No		
Citizens and NGOs	No		
Missions			
Functions	Yes	No	Details
Monitoring		X	
Co-ordination	X		
Regulation		X	
Data collection	X		
Pollution prevention		X	
Harmonisation of water policies at basin level	X		
Allocation of uses		X	
Planning	X		
Financing		X	
Monitoring			
The CIW guarantees the uniform approach of integrated water policy in the sub-basins. In each sub-basin an annual sub-basin progress report has to be made, that includes: 1) an integrated progress report on the level of implementation of the sub-basin management plan; and 2) a statement of the activities to be taken in the sub-basin for further implementing the basin management plan			
Financing			
Type	Details		
Autonomous budget	A small budget is provided for administration, and communication and a small number of specific studies. For other activities, the river basin committees, <i>i.e.</i> CIW and the sub-basin committees, are depending on financial resources of the participating authorities		
Grants from sub-national governments	No		

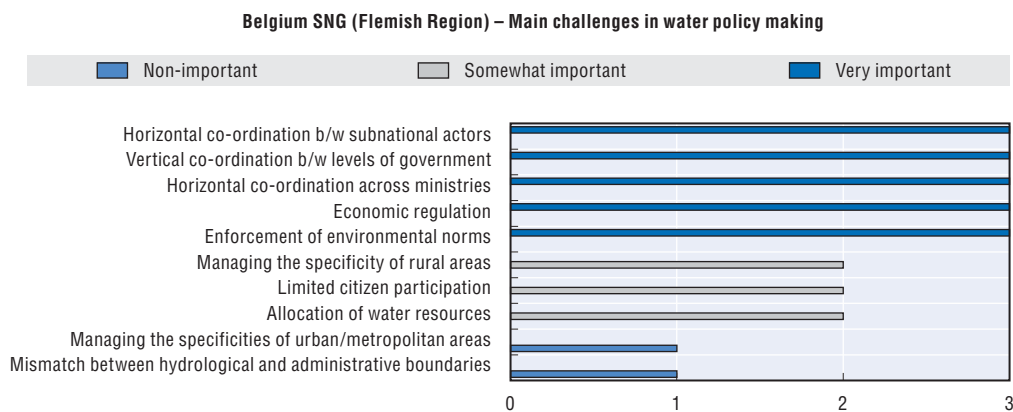
Tools to manage the interface between actors at sub-national level

Existing mechanisms for co-ordination across different water actors at sub-national level	Yes	No	n/a	Details (name, example, contact information, website, capacity issues addressed, etc.)
Inter-municipal collaboration	X			District water boards
Inter-municipal specific body	X			Inter-municipal drinking water companies and inter-municipal waste water treatment companies
Specific incentives from central/regional government (in terms of rules, rewards and sanction mechanisms, budget allocation, etc.)	X			Subsidies provided to the municipalities for sewerage systems and small-scale waste water treatment systems
Historical rules and traditions				
Specific mechanisms for conflict resolution				
Informal co-operation around projects	X			These projects are laid down in the water management plans
Joint financing				
Metropolitan or regional water districts			X	
Other (specify)				

Tools for capacity building at sub-national level

Type of mechanism	Yes	No	n/a	Details (name, example, contact information, website, capacity issues addressed, etc.)
Broad governance mechanisms				
Collaboration with the private sector (know-how transfer, concession contracts, BOTs, etc.)	X			Projects for waste water treatment, water in the city
Financial incentives (specify from whom and for what)				
Performance indicators and targets holding local governments accountable				Instrument on reporting obligation by communities (since 2008): Economic and technical/operational performance indicators for local governance to be reported to VMM (including use of financial resources from drinking water levies for maintenance of sewers)
Citizens' participation				
Involvement of civil society organisations	X			Municipal environment boards installed by means of an bilateral agreement between municipality and regional line ministry for environment
Databases (sharing information)	X			
Historical arrangements (water courts, etc.)				
Other (specify)				
Management mechanisms				
Training – Workshops – Conferences	X			University of Antwerp: regular water symposia are organised since 2006 by CIW and the Chair Integrated Water Management (hosted by the UA). The Chair IWM also organises debates, evening lectures and training courses for students and professionals
Specific performance monitoring mechanism for staff (teams or individuals)				
Other (specify)				

Final assessment of remaining challenges



BELGIUM (WALLONIA)

Acronyms and abbreviations

CCPIE	<i>Comité de concertation de la politique internationale en matière d'environnement</i> (Consultation Committee for international environmental policy)
SPGE	<i>Société publique de gestion de l'eau</i> (Public Company for water management)
SPW	<i>Service Public de Wallonie</i> (Public Service of Wallonia)
SWDE	<i>Société wallonne des eaux</i> (Water Wallonia Company)

Institutional mapping of water policy roles and responsibilities at central government level: Allocation of roles across ministries and public agencies

Design and implementation of water policies

Roles and responsibilities in water policy are exclusively devoted to regions, apart from littoral and coastal water management and the minimum price for drinking water.

Institutional mapping for quality standards and regulation

No competencies at federal level.

Co-ordination of water policy making across ministries and public agencies at central government level

Existing mechanisms for co-ordinating the action across ministries and public agencies

Existing co-ordination mechanism across ministries/public agencies	Yes	No	Details (name, website, contact detail, description, examples, etc.)
A ministry of water			
A line ministry			
A central agency for water related issues			
An <i>ad hoc</i> high level structure (National Council, etc.)			
An inter-ministerial body (committee, commission, etc.)	X		At the federal level, the CCPIE, Consultation Committee for international environmental policy, was created in 1995. It is composed of representatives of relevant ministries and administrations at federal and regional levels. It relies on specific thematic working groups, including one on water with 2 objectives: <i>i)</i> define Belgium positions to defend at international level; and <i>ii)</i> prepare the ratification process related to EU water directives and other international agreements
An inter-agency programme			
An inter-ministerial mechanism for addressing territorial water concerns			
Other (specify)			
No specific co-ordination mechanism			

Institutional mapping of water policy roles and responsibilities at sub-national level: Allocation of roles across local and regional authorities

Allocation of roles and responsibilities in water policy design and implementation at territorial level

Roles	Domain	Water resources	Water services		
			Water		Wastewater treatment
			Domestic use	Agriculture	Industry
Strategy, priority setting, and planning (including infrastructure)		Government of Wallonia SPW	Government of Wallonia	Government of Wallonia	Government of Wallonia
Policy-making and implementation		SPW	Distribution of water: SWDE and intermunicipal bodies For extraction permits (wells): SPW	For extraction permits (wells): SPW	For extraction permits (wells): SPW
Information, monitoring and evaluation		SPW	SPW		
Stakeholders engagement (citizens' awareness, etc.)		Water Consultation Commission	Water Consultation Commission	Water Consultation Commission	Water Consultation Commission
Other (specify)					

Allocation of roles and responsibilities in water regulation (rule production and enforcement)

Actors	Domain	Water resources	Water services		
			Water		Wastewater treatment
			Domestic use	Agriculture	Industry
Municipalities		X	X		
Regions (provinces, states in federal countries, autonomous regions, cantons, etc.)		X	X		
Inter-municipal bodies			X		
Water specific bodies (e.g. elected water boards, etc.)					
River basin organisations					
Other (specify)					

Co-ordination of water policy making between levels of government and across local actors

Existing mechanisms for co-ordinating water policy between levels of government and at territorial level

Existing mechanism for vertical co-ordination and territorial effectiveness in water policy	Yes	No	n/a	Details (contact information, website, etc.)
River basin organisations/agencies		X		
Regulations for sharing roles between actors				Legislation – Water Code (see above)
Co-ordination agency or commission	X			Co-ordination between regions, at Belgium level: CCPIE (see above)
Contractual arrangements (between central and local governments, central and regional governments, regional and local governments)	X			- Between regional Government and SPGE - Between SPGE and municipalities - Between regional and local governments (<i>e.g.</i> river contracts)
Intermediate bodies or actors (<i>e.g.</i> state territorial representatives)				
Financial transfers or incentives				
Performance indicators	X			Dashboard of Environment in the Wallonia Region http://etat.environnement.wallonie.be
Shared databases				OGEAD (GIS) http://environnement.wallonie.be/cartosig/ogead
Sectoral conferences between central and sub-national water players				
Multi-sectoral conferences				
Consultation of private stakeholders (profit and non-profit actors)	X			Water Consultative Commission (at regional level), www.cesrw.be/index.php?page=detail&alias=Commission-consultative-de-IEau-CCE
Other (specify)				

Specific focus on selected mechanisms

Tools to manage the interface between actors at sub-national level

Existing mechanisms for co-ordination across different water actors at sub-national level	Yes	No	Details (name, example, contact information, website, capacity issues addressed, etc.)
Inter-municipal collaboration	X		<i>For drinking water:</i> SWDE and intermunicipal bodies (CILE, IECBW, INASEP) <i>For sanitation:</i> 7 intermunicipal bodies (AIDE, AIVE, IBW, IDEA, IGRETEC INASEP, IPALLE)
Specific incentives from central/regional government (in terms of rules, rewards and sanction mechanisms, budget allocation, etc.)			
Historical rules and traditions			
Specific mechanisms for conflict resolution	X		
Informal co-operation around projects			
Joint financing			
Metropolitan or regional water districts			

Tools for capacity building at sub-national level

Type of Mechanism	Yes	No	n/a	Details (name, example, contact information, website, capacity issues addressed, etc.)
Broad governance mechanisms				
Collaboration with the private sector (know-how transfer, concession contracts, BOTs, etc.)	X			
Financial incentives (specify from whom and for what)				
Performance indicators and targets holding local governments accountable	X			Dashboard of Environment in the Wallonia Region
Citizens' participation	X			River contracts
Involvement of civil society organisations	X			Water Consultative Commission
Databases (sharing information)	X			OGEAD
Historical arrangements (water courts, etc.)				
Other (specify)				
Management mechanisms				
Training – Workshops – Conferences	X			
Specific performance monitoring mechanism for staff (teams or individuals)	X			Adoption of an integrated management of operations (SIMO) within the SWP – Staff management by objectives
Other (specify)				

CANADA

Acronyms and abbreviations

DFO	Department of Fisheries and Oceans (is this part of Environment Canada?)
EC	Environment Canada
HC	Health Canada

**Institutional mapping of water policy roles and responsibilities at central government level:
Allocation of roles across ministries and public agencies**

Design and implementation of water policies

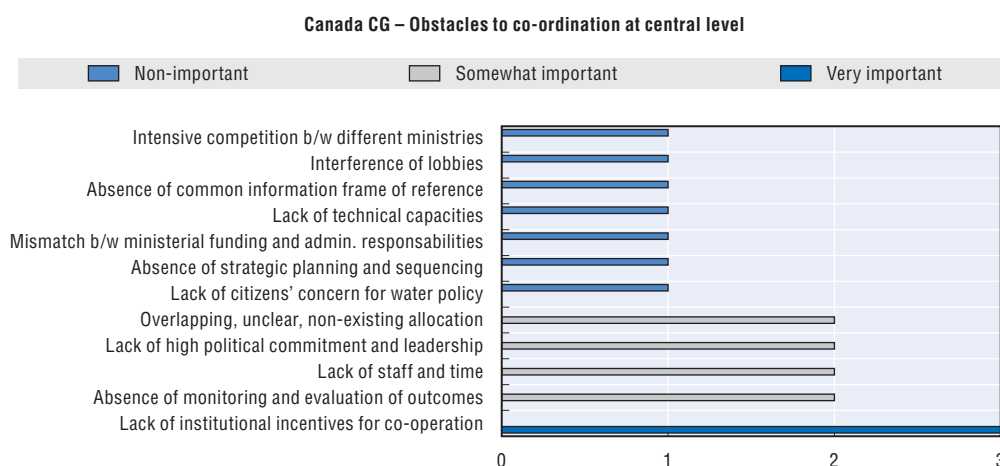
Roles	Areas	Water resources	Water services			
	Water supply			Wastewater treatment		
	Domestic		Agriculture		Industry	
Strategy, priority setting and planning (including infrastructure)		Environment Canada, Department of Fisheries and Oceans	Health Canada	n/a	n/a	Environment Canada (regulations in development)
Policy-making and implementation		Environment Canada, Department of Fisheries and Oceans	Health Canada	n/a	n/a	Environment Canada (regulations in development)
Information, monitoring and evaluation		Environment Canada, Department of Fisheries and Oceans	Health Canada	n/a	n/a	Environment Canada (regulations in development)
Stakeholders engagement (citizens' awareness, etc.)		Environment Canada, Department of Fisheries and Oceans	Health Canada	n/a	n/a	Environment Canada (regulations in development)
Other (specify)						

Institutional mapping for quality standards and regulation

Roles	Areas	Water resources	Water services		
			Water supply		Wastewater treatment
			Domestic	Agriculture	Industry
Allocation of uses		n/a	n/a	n/a	n/a
Quality standards		n/a	Ministerial Department (Health Canada – for passenger conveyances)	n/a	n/a
Compliance of service delivery commitment		n/a	n/a	n/a	n/a
Economic regulation (tariffs, etc.)		n/a	n/a	n/a	n/a
Environmental regulation (enforcement of norms, etc.)		Ministerial departments (Environment Canada, Department of Fisheries and Oceans)	n/a	n/a	n/a
Other (specify)					

Co-ordination of water policy making across ministries and public agencies at central government level

Obstacles to horizontal co-ordination in water policy making



Existing mechanisms for co-ordinating the action across ministries and public agencies

Existing co-ordination mechanism across ministries/public agencies	Yes	No	Details (name, website, contact detail, description, examples, etc.)
A ministry of water		X	
A line ministry		X	
A central agency for water related issues		X	
An <i>ad hoc</i> high level structure (National Council, etc.)	X		Certain watershed initiatives have cross-ministerial co-ordinating committees (e.g. St. Lawrence Plan, www.planstlaurent.qc.ca)
An inter-ministerial body (committee, commission, etc.)		X	
An inter-agency programme		X	
A co-ordination group of experts		X	
An inter-ministerial mechanism for addressing territorial water concerns		X	
Other (please specify)	X		Inter-departmental committees are formed on an issue/initiative-specific basis
No specific co-ordination mechanism			

Institutional mapping of water policy roles and responsibilities at sub-national level: Allocation of roles across local and regional authorities

Allocation of roles and responsibilities in water policy design and implementation at territorial level

Areas	Water resources	Water services		
		Water supply		Wastewater treatment
		Domestic	Agriculture	Industry
Actors at sub-national level				
Municipalities		X		
Regions (provinces, states in federal countries, autonomous regions, cantons, etc.)	X	X	X	X
Inter-municipal bodies	X			
Water specific bodies (e.g. elected water boards, etc.)	X			
River basin organisations	X			
Other (specify)				

Allocation of roles and responsibilities in water regulation (rule production and enforcement)

Areas	Water resources	Water services		
		Water supply		Wastewater treatment
		Domestic	Agriculture	Industry
Roles				
Allocation of uses	Regions (Provinces)	Regions (Provinces)	Regions (Provinces)	Regions (Provinces)
Quality standards	Regions (Provinces)	Regions (Provinces)	n/a	n/a
Compliance of service delivery commitment	n/a	Municipalities	n/a	n/a
Economic regulation (tariffs, etc.)	n/a	Municipalities	n/a	n/a
Environmental regulation (enforcement of norms, etc.)	Regions (Provinces)	Regions (Provinces)	n/a	Regions (Provinces)
Control at sub-national level of national regulations' enforcement	n/a	n/a	n/a	n/a
Other (specify)				

Co-ordination of water policy making between levels of government and across local actors

Obstacles to vertical co-ordination in water policy making

Not informed.

Obstacles to capacity building and co-ordination at territorial level

Not informed.

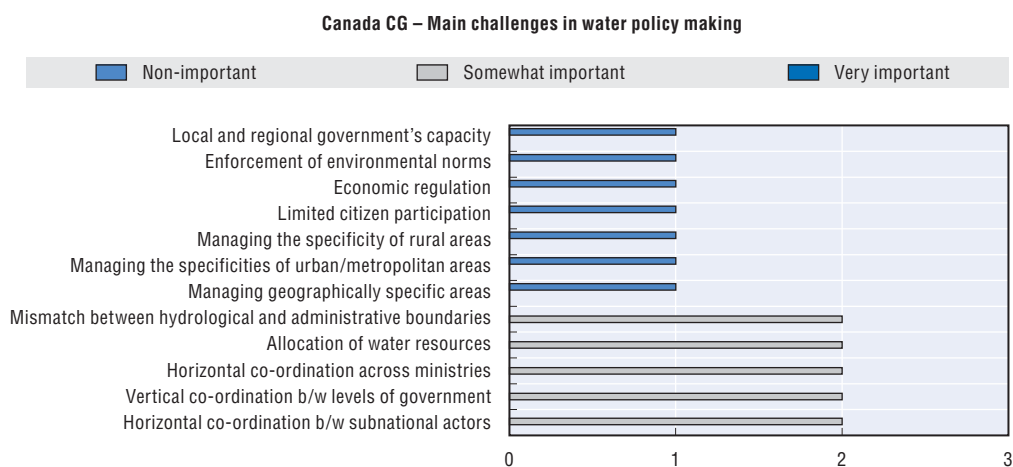
Existing mechanisms for co-ordinating water policy between levels of government and at territorial level

Existing mechanism for vertical co-ordination and territorial effectiveness in water policy	Yes	No	Details (contact information, website, etc.)
River basin organisations/agencies	X		There are watershed specific examples of river basin organisations <i>E.g.</i> the Mackenzie River Basin Board, www.mrbba.ca
Regulations for sharing roles between actors		X	
Co-ordination agency or commission	X		Canadian Council of Ministers of the Environment, www.ccme.ca Federal-Provincial-Territorial Committee on Drinking Water; Committee on Health and the Environment
Contractual arrangements (between central and local governments, central and regional governments, regional and local governments)	X		<i>E.g.</i> Canada's Water Survey include partnership agreements with Provinces, www.ec.gc.ca/rhc-wsc/default.asp?lang=En&n=EDA84EDA-1 - Specific watershed initiatives such as the Lake Winnipeg Basin Initiative, www.ec.gc.ca/paee-apcw/default.asp?lang=En&n=61284017-1 - The St. Lawrence Plan, www.planstlaurent.qc.ca - Canada – Ontario Agreement Respecting the Great Lakes Basin Ecosystem, www.on.ec.gc.ca/coa
Intermediate bodies or actors (<i>e.g.</i> state territorial representatives)		X	
Financial transfers or incentives	X		MOUs involving funds between EC and Provincial authorities for the development and calculation of the water CESI, www.ec.gc.ca/indicateurs-indicators
Performance indicators	X		Within specific watershed initiatives, but not country-wide
Shared databases	X		Information is shared within some specific transboundary water boards such as the Prairies Provinces Water Board
Sectoral conferences between central and sub-national water players	X		Within specific watershed initiatives
Multi-sectoral conferences	X		Within specific watershed initiatives; biennial National Drinking Water Conference
Consultation of private stakeholders (profit and non-profit actors)		X	
Other (specify)			

Specific focus on selected mechanisms

Tools to manage the interface between actors at sub-national level. This question assumes a system in which the central government sets out all water policy that is then implemented at the regional level. This is not the case in Canada.

Tools for capacity building at sub-national level. This section is difficult to address in the Canadian context. Canada is a federation of ten provinces and three territories, each of which have jurisdiction over water within their boundaries. There will likely be 13 different perspectives for each of the questions in this section.

Final assessment of remaining challenges

CHILE

Acronyms and abbreviations

CCC	<i>Comision Chilena del Cobre, Ministerio de Minería</i> (Chilean Commission of Copper, Department of Mining)
CNE	<i>Comision Nacional de energía</i> (National Energy Commission)
CNR	<i>Comisión Nacional de Riego</i> (National Commission for Irrigation)
CONAMA	<i>Comision Nacional de Medio Ambiente</i> (National Commission for the Environment)
MOP/DGA	<i>Ministerio de Obras Públicas/Direccion General de Aguas</i> (Ministry of Public Works/General Water Authority)
MOP/DOH	<i>Ministerio de Obras Públicas/Direccion de Obras Hidráulicas</i> (Ministry of Public Works/Directorate General for Hydraulic Works)
MINAGRI	<i>Ministerio de Agricultura</i> (Ministry of Agriculture)
MINECO	<i>Ministerio de Economía</i> (Ministry of Economy)
MINSALUD	<i>Ministerio de Salud</i> (Ministry of Health)
PAPR-DOH	<i>Programa de Agua Potable Rural, Direccion de Obras Hidraulicas, Ministerio de Obras Publicas</i> (Rural drinking water programme, Directorate General for Hydraulic Works, Ministry of Public Works)
SISS	<i>Superintendencia de Servicios Sanitarios</i> (Superintendence of Sanitary Services)

Institutional mapping of water policy roles and responsibilities at central government level: Allocation of roles across ministries and public agencies

Design and implementation of water policies

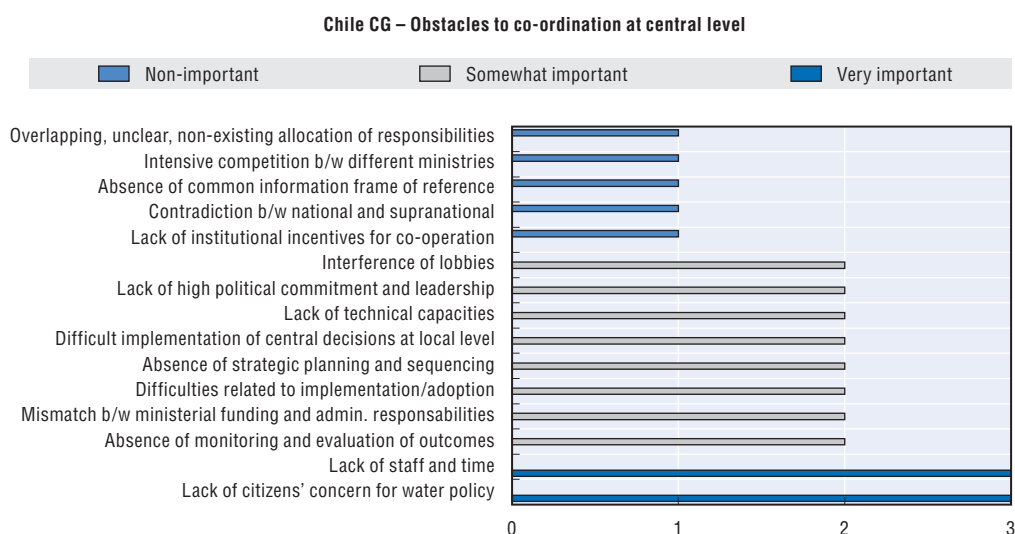
Roles	Areas	Water resources	Water services			
			Water supply			Wastewater treatment
			Domestic	Agriculture	Industry	
Strategy, priority setting, and planning (including infrastructure)		Ministry of Public Works (MOP) through: • General Water Authority (DGA) • Directorate General for Hydraulic Works (DOH)	• <i>Urban</i>: Superintendencia of Sanitary Services (SISS) • <i>Rural</i>: Rural drinking water programme, DOH, Ministry of Public Works	• Ministry of Agriculture (Minagri) through the Executive Secretariat of the National Commission for Irrigation (CNR) • Ministry of Public Works, DOH	• <i>Hydroelectricity</i>: National Energy Commission (CNE) • <i>Mining</i>: Chilean Commission of Copper, Department of Mining	• <i>Urban</i>: SISS • <i>Rural</i>: MOP – A bill to institutionalise this matter is being discussed by the Parliament
Policy-making and implementation		MOP, DGA	• <i>Urban</i>: SISS • <i>Rural</i>: MOP-DOH	• Minagri, Executive Secretariat • CNR • MOP-DOH		• <i>Urban</i>: SISS • <i>Rural</i>: MOP, through DOH
Information, monitoring and evaluation		DGA	• <i>Urban</i>: SISS • <i>Rural</i>: PAPR-DOH	• Minagri • CNR		• <i>Urban</i>: SISS • <i>Rural</i>: Directorate General for Hydraulic Works, Ministry of Public Works
Stakeholders engagement (citizens' awareness, etc.)		DGA, National Commission for the Environment, DOH, CNR	• <i>Urban</i>: SISS • <i>Rural</i>: Water companies and DOH	• Minagri • CNR • MOP-DOH	• <i>Hydroelectricity</i>: National Energy Commission (CNE) • <i>Mining</i>: Chilean Comm. of Copper, Dept. of Mining	• <i>Urban</i>: SISS • <i>Rural</i>: Although it is scarce in rural areas, Regional Governments and Municipalities can be mentioned
Other (specify)		Organisations of professionals	• Water companies	• Associations of irrigation users	• Private Associations	• Water companies

Institutional mapping for quality standards and regulation

Roles	Areas	Water resources	Water services		
			Water supply		Wastewater treatment
			Domestic		
Allocation of uses	DGA	DGA	DGA	DGA	
Quality standards	SISS CONAMA	SISS	MINAGRI and MOP	Ministry of Health	SISS
Compliance of service delivery commitment		Water companies			At the urban level: Water companies
Economic regulation (tariffs, etc.)	DGA	SISS at the urban level The committees themselves at the rural level	Council of Ministers of the National Commission for Irrigation	Ministry of Economy	SISS
Environmental regulation (enforcement of norms, etc.)	CONAMA	CONAMA SISS	MINAGRI	Ministry of Health	SISS
Other (specify)					

Co-ordination of water policy making across ministries and public agencies at central government level

Obstacles to horizontal co-ordination in water policy making



Existing mechanisms for co-ordinating the action across ministries and public agencies

Existing co-ordination mechanism across ministries/public agencies	Yes	No	Details (name, website, contact detail, description, examples, etc.)
A ministry of water		X	
A line ministry	X		Ministry of Public Works (www.mop.cl) through the General Water Authority (www.dga.cl) and the Directorate General for Hydraulic Works
A central agency for water related issues	X		MOP, DGA www.dga.cl
An inter-ministerial body (committee, commission, etc.)	X		Council of Ministers of the National Commission for Irrigation, which is a legal entity
An inter-agency programme	X		Ministerial Committee for Water Policy, chaired by the Ministry of Public Works
A co-ordination group of experts		X	
An inter-ministerial mechanism for addressing territorial water concerns			Water committees at the regional and/or river basin level MINAGRI – MOP

Institutional mapping of water policy roles and responsibilities at sub-national level: Allocation of roles across local and regional authorities

Allocation of roles and responsibilities in water regulation (rule production and enforcement)

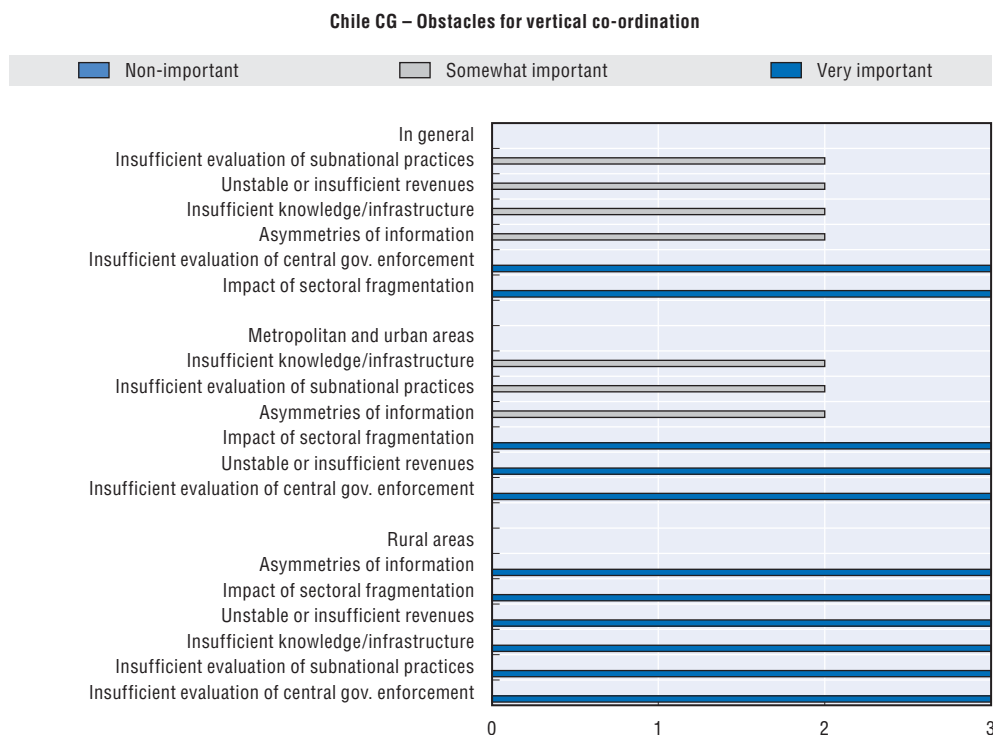
Roles	Areas	Water resources	Water services		
			Water supply		Wastewater treatment
			Domestic	Agriculture	
Allocation of uses	DGA	SISS, APR, MINSAL	DGA	DGA	SISS
Quality standards	DGA CONAMA	MINSAL SISS	MINAGRI	MINSAL	SISS
Compliance of service delivery commitment	DGA	SISS APR			
Economic regulation (tariffs, etc.)	DGA	SISS APR	–	Ministry of Economy	SISS APR
Environmental regulation (enforcement of norms, etc.)	DGA CONAMA	SISS APR	MINAGRI	CONAMA	SISS APR
Control at sub-national level of national regulations' enforcement	DGA CONAMA	SISS APR	MINAGRI	DGA Ministry of Economy	SISS APR
Other (specify)					

Allocation of roles and responsibilities in water policy design and implementation at territorial level

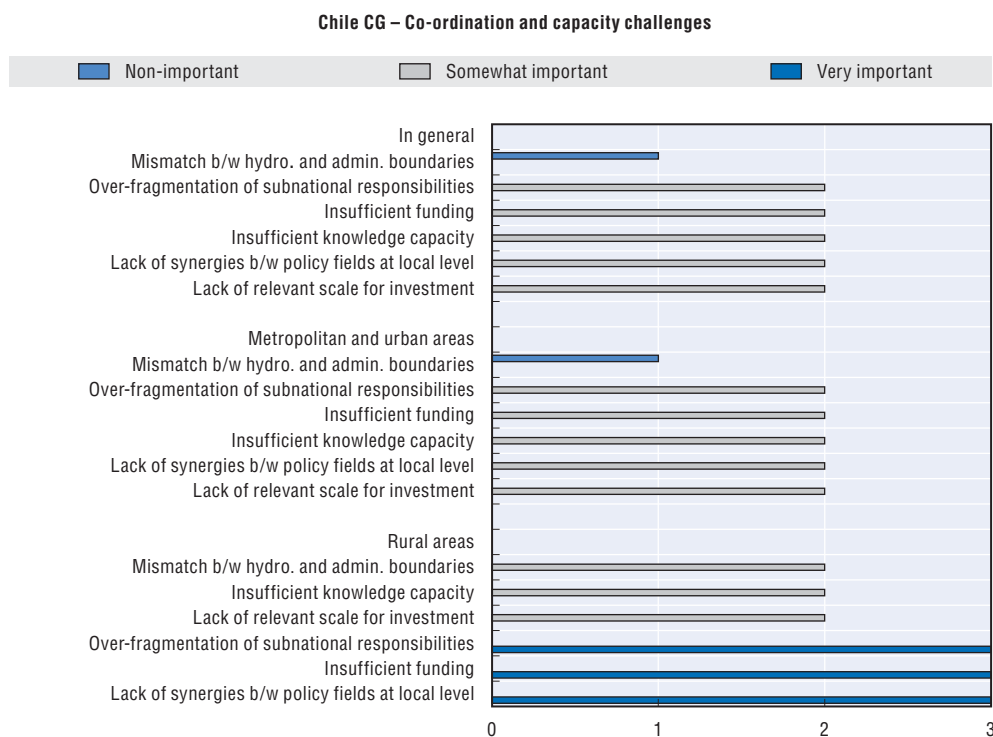
Actors at sub-national level	Areas	Water resources	Water services		
			Water supply		Wastewater treatment
			Domestic	Agriculture	
Municipalities	No	No	No	No	Yes, they are involved at the rural level
Regions (provinces, states in federal countries, autonomous regions, cantons, etc.)	No	No	No	No	No
Inter-municipal bodies	No	No	No	No	No
Water specific bodies (e.g. elected water boards, etc.)	No	No	No	No	No
River basin organisations	No	No	No	No	No
Other (specify)	DGA, CONAMA	SISS, DOH en APR	DGA, CNR,INDAP, MINAGRI, MOP – DOH	DGA	SISS

Co-ordination of water policy making between levels of government and across local actors

Obstacles to vertical co-ordination in water policy making



Obstacles to capacity building and co-ordination at territorial level



Existing mechanisms for co-ordinating water policy between levels of government and at territorial level

Existing mechanism for vertical co-ordination and territorial effectiveness in water policy	Yes	No	n/a	Details (contact information, website, etc.)
River basin organisations/agencies		X		There are no river basin organisations
Regulations for sharing roles between actors		X		
Co-ordination agency or commission		X		
Contractual arrangements (between central and local governments, central and regional governments, regional and local governments)	X			Regional development strategies
Intermediate bodies or actors (e.g. state territorial representatives)		X		
Financial transfers or incentives	X			Planning agreements
Performance indicators		X		
Shared databases				
Sectoral conferences between central and sub-national water players	X			Water committees in some river basins (informal bodies)
Multi-sectoral conferences				
Consultation of private stakeholders (profit and non-profit actors)	X			Participation of citizens
Other (specify)				

Specific focus on selected mechanisms

Tools to manage the interface between actors at sub-national level

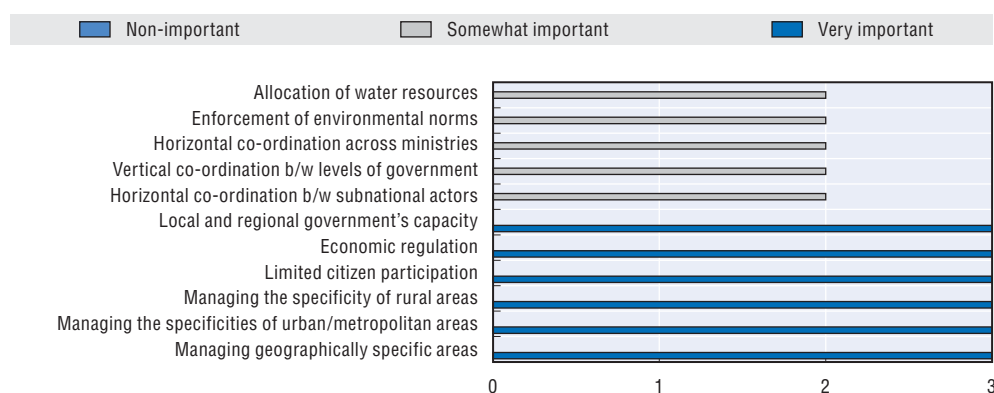
Existing mechanisms for co-ordination across different water actors at sub-national level	Yes	No	n/a	Details (name, example, contact information, website, capacity issues addressed, etc.)
Inter-municipal collaboration		X		
Inter-municipal specific body		X		
Specific incentives from central/regional government (in terms of rules, rewards and sanction mechanisms, budget allocation, etc.)		X		
Historical rules and traditions		X		
Specific mechanisms for conflict resolution		X		
Informal co-operation around projects	X			
Joint financing	X			
Metropolitan or regional water districts		X		
Other (specify)				

Tools for capacity building at sub-national level

Type of mechanism	Yes	No	n/a	Details (name, example, contact information, website, capacity issues addressed, etc.)
Broad governance mechanisms				
Collaboration with the private sector (know-how transfer, concession contracts, BOTs, etc.)	X			To support Water companies with the management of supply at the rural level
Financial incentives (specify from whom and for what)	X			Regional development funds, which in some – but not all – regions give importance to the issue of water
Performance indicators and targets holding local governments accountable		X		
Citizens' participation	X			Organisations of water users
Involvement of civil society organisations		X		
Databases (sharing information)		X		
Historical arrangements (water courts, etc.)		X		
Other (specify)				
Management mechanisms				
Training – Workshops – Conferences	X			Some scattered initiatives in some regions
Specific performance monitoring mechanism for staff (teams or individuals)		X		
Other (specify)				

Final assessment of remaining challenges

Chile CG – Main challenges in water policy making



FRANCE

Acronyms and abbreviations

CNEAU	<i>Comité National de l'Eau</i> (National Water Committee)
DREAL	<i>Direction Régionale de l'Environnement, de l'Aménagement et du Logement, qui sont les antennes régionales du MEEDDM</i> (Regional Directorate for Environment, Planning and Housing, which are the regional branches of the MEEDDM)
MAGRI	<i>Ministère de l'Agriculture</i> (Ministry of Agriculture)
MEEDDM	<i>Ministère de l'Écologie, de l'Énergie, du Développement durable et de la Mer</i> (Ministry of Ecology, Energy, Sustainable Development and Maritime Affairs)
MIND	<i>Ministère de l'Industrie</i> (Ministry of Industry)
MINT	<i>Ministère de l'Intérieur</i> (Ministry of the Interior)
MSANTE	<i>Ministère de la Santé</i> (Ministry of Health)
ONEMA	<i>Office National de l'Eau et des Milieux Aquatiques</i> (National Office for Water and Aquatic Environments)
SNDE	<i>Schéma National des Données sur l'Eau</i> (protocole signé par les producteurs de données) (National Statistics Scheme on Water)

**Institutional mapping of water policy roles and responsibilities at central government level:
Allocation of roles across ministries and public agencies**

Design and implementation of water policies

Roles	Areas	Water resources	Water services		
			Water supply		
			Domestic	Agriculture	Industry
Strategy, priority setting, and planning (including infrastructure)		Ministry of Ecology	Ministry of Health Ministry of Ecology	Ministry of Ecology	Ministry of Ecology
Policy-making and implementation		ONEMA	Ministry of Health Ministry of Ecology	Ministry of Ecology	Ministry of Ecology
Information, monitoring and evaluation		ONEMA Ministry of Ecology (ex-IFEN)	Ministry of Health Ministry of Ecology ONEMA	Ministry of Ecology ONEMA	Ministry of Ecology ONEMA
Stakeholders engagement (citizens' awareness, etc.)		National Water Committee River basin committees	National Water Committee	National Water Committee	National Water Committee
Other (specify)					

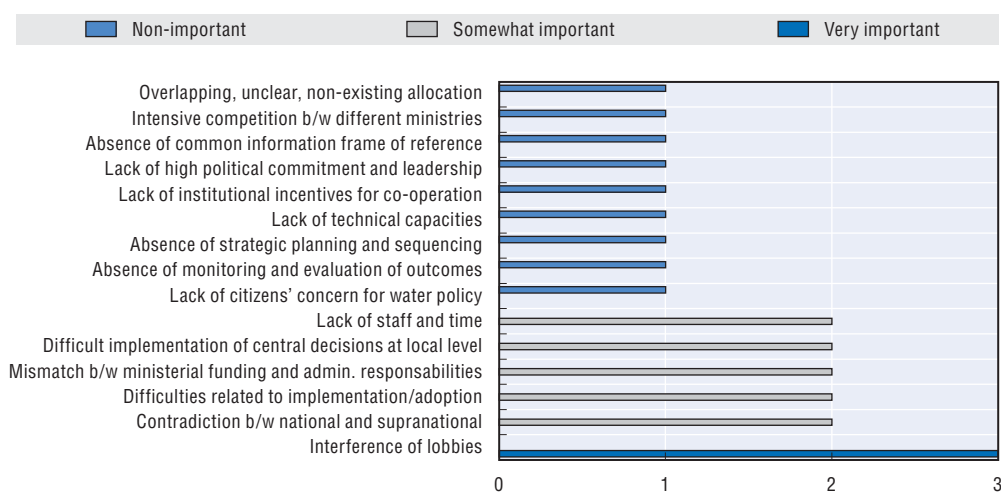
Institutional mapping for quality standards and regulation

Roles	Areas	Water resources	Water services		
			Water supply		Wastewater treatment
			Domestic	Agriculture	Industry
Allocation of uses		Ministry of Ecology		Ministry of Agriculture	
Quality standards		Ministry of Ecology	Ministry of Health	Ministry of Health Ministry of Agriculture	Ministry of Ecology
Compliance of service delivery commitment		Ministry of Ecology	Ministry of Health	Ministry of Agriculture	
Economic regulation (tariffs, etc.)		Parliament (environmental taxes)	Parliament (regulation of service requirement; charging structures)	(not concerned, water for irrigation being tapped from the natural environment or specific networks)	Parliament (regulation of service requirement; charging structures)
Environmental regulation (enforcement of norms, etc.)		Ministry of Ecology	Ministry of Ecology	Ministry of Ecology	Ministry of Ecology
Other (specify)					

Co-ordination of water policy making across ministries and public agencies at central government level

Obstacles to horizontal co-ordination in water policy making

France CG – Obstacles to co-ordination at central level



Existing mechanisms for co-ordinating the action across ministries and public agencies

Existing co-ordination mechanism across ministries/public agencies	Yes	No	Details (name, website, contact detail, description, examples, etc.)
Existing co-ordination mechanism across ministries/public agencies		X	
A ministry of water	X		Ministry of Ecology (MEEDDM), Directorate for Water and Biodiversity • <i>Contact:</i> Ms. Odile Gauthier, Director for Water and Biodiversity, www.developpement-durable.gouv.fr
A line ministry	X		National Office for Water and Aquatic Environments (ONEMA) • <i>Contact:</i> Mr. Patrick Lavarde, Director-General, www.onema.fr
A central agency for water related issues	X		National Water Committee (CNE) • <i>Contact:</i> Mr. André Flajolet, Deputy of the Pas-de-Calais, President of CNE
An inter-ministerial body (committee, commission, etc.)	X		Interministerial Mission for Water • <i>Contact:</i> Ms. Odile Gauthier, Director for Water and Biodiversity
An inter-agency programme	X		Research and Studies Programme, common to Water Agencies, www.lesagencesdeleau.fr
A co-ordination group of experts	X		National Steering Group for the implementation of the DCE • <i>Contact:</i> Ms. Odile Gauthier, Director for Water and Biodiversity
An inter-ministerial mechanism for addressing territorial water concerns		X	
Other (specify)			
No specific co-ordination mechanism			

Institutional mapping of water policy roles and responsibilities at sub-national level: Allocation of roles across local and regional authorities

Allocation of roles and responsibilities in water policy design and implementation at territorial level

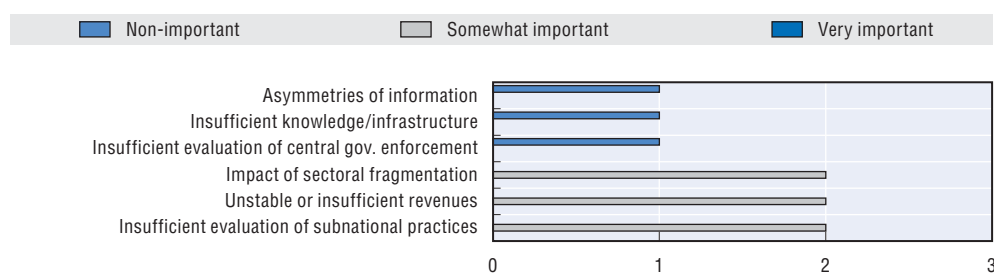
Areas	Water resources	Water services		
		Water supply		Wastewater treatment
		Domestic	Agriculture	
Actors at sub-national level				
Municipalities		X		X
Regions (provinces, states in federal countries, autonomous regions, cantons, etc.)				
Inter-municipal bodies		X		X
Water specific bodies (e.g. elected water boards, etc.)	X	X	X	X
River basin organisations	X			
Other (specify) – Chambers of agriculture – Chambers of Industry and Commerce			X	

Allocation of roles and responsibilities in water regulation (rule production and enforcement)

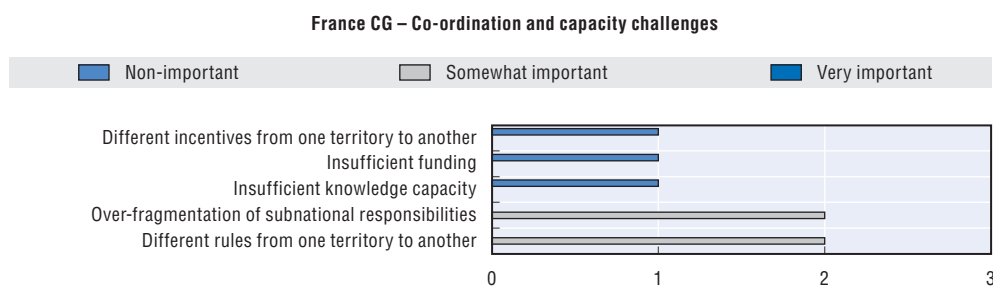
Roles	Areas	Water resources	Water services			
			Water supply			Wastewater treatment
			Domestic	Agriculture	Industry	
Allocation of uses		Department Prefect	Municipalities		Municipalities	Municipalities
Quality standards		Department Prefect	Department Prefect		Department Prefect	Department Prefect
Compliance of service delivery commitment		Department Prefect	Municipalities	ASA, SAR	Municipalities	Municipalities
Economic regulation (tariffs, etc.)		River Basin Committee and Water Agencies	Municipalities	ASA, SAR	Municipalities	Municipalities
Environmental regulation (enforcement of norms, etc.)		Department Prefect	Department Prefect	Department Prefect	Department Prefect	Department Prefect
Control at sub-national level of national regulations' enforcement		DREAL and MEEDDM decentralised services Agents of the ONEMA	DREAL and MEEDDM decentralised services Decentralised services of the Ministry of Health ONEMA	DREAL and MEEDDM decentralised services Department Prefect	DREAL and MEEDDM decentralised services Department Prefect	DREAL and MEEDDM decentralised services Department Prefect
Other (specify)						

Co-ordination of water policy making between levels of government and across local actors**Obstacles to vertical co-ordination in water policy making**

France CG – Obstacles for vertical co-ordination



Obstacles to capacity building and co-ordination at territorial level



Existing mechanisms for co-ordinating water policy between levels of government and at territorial level

Existing mechanism for vertical co-ordination and territorial effectiveness in water policy	Yes	No	n/a	Details (contact information, website, etc.)
River basin organisations/agencies	X			
Regulations for sharing roles between actors	X			
Co-ordination agency or commission	X			
Contractual arrangements (between central and local governments, central and regional governments, regional and local governments)	X			
Intermediate bodies or actors (e.g. state territorial representatives)	X			
Financial transfers or incentives	X			
Performance indicators	X			
Shared databases	X			
Sectoral conferences between central and sub-national water players	X			
Multi-sectoral conferences		X		
Consultation of private stakeholders (profit and non-profit actors)		X		
Other (specify)				

Specific focus on selected mechanisms

River basin organisations: Constituencies, missions, monitoring, financing

Constituencies			
Type of actor or institution	Name		
Central government ministries or public agencies	• To the Ministry of Ecology • To the National Office for Water and Aquatic Environments • Furthermore, they have to report yearly to the Parliament, through the Ministry of Ecology, on their action		
Local and regional authorities	• The Water Agency reports to local and regional authorities, as well as to all other local and regional actors, through the river basin committee where they are all represented		
Private companies/actors	• The Water Agency reports to private companies by informing stakeholders represented on the river basin committee		
Citizens and NGOs	• The Water Agency reports to citizens and NGOs by informing stakeholders represented on the river basin committee as well as the general public through websites and various publications		
Missions			
Functions	Yes	No	Details
Monitoring	X		
Co-ordination		X	
Regulation		X	
Data collection	X		
Pollution prevention	X		
Harmonization of water policies at basin level		X	
Allocation of uses		X	
Planning	X		
Financing	X		
Infrastructure		X	
Other			Communication and information
Monitoring			
Undertaken by the Ministry of Ecology, Directorate for Water and Biodiversity, www.developpement-durable.gouv.fr Websites of Water Agencies (France) and Water Offices (overseas departments): • www.lesagencesdeleau.fr • www.eau-adour-garonne.fr • www.eau-artois-picardie.fr • www.eau-rhin-meuse.fr • www.eaurmc.fr • www.eau-seine-normandie.fr • www.eaumartinique.eu • www.eaureunion.fr • eauguadeloupe.com			
Financing			
Type	Details		
Autonomous budget	• The budget of the Water Agencies is based on the “polluter pays” and “user pays” principles • Agencies collect fees on withdrawals and discharges of those users which affect water quality or alter the rate of flow • These are taxes allocated to water: not only are they collected for activities that impact water resources, but the income of these taxes is earmarked for activities aiming to preserve water resources • This is the principle of “water pays for water” • Charges are only levied on water users which makes them different from the tax (since, on the other hand, the tax is actually paid by all citizens and feeds the general budget of the State, Regions, Departments and Municipalities) • The budget of Water Agencies therefore comes from the water bill		
Grants from sub-national governments	No		

Tools to manage the interface between actors at sub-national level

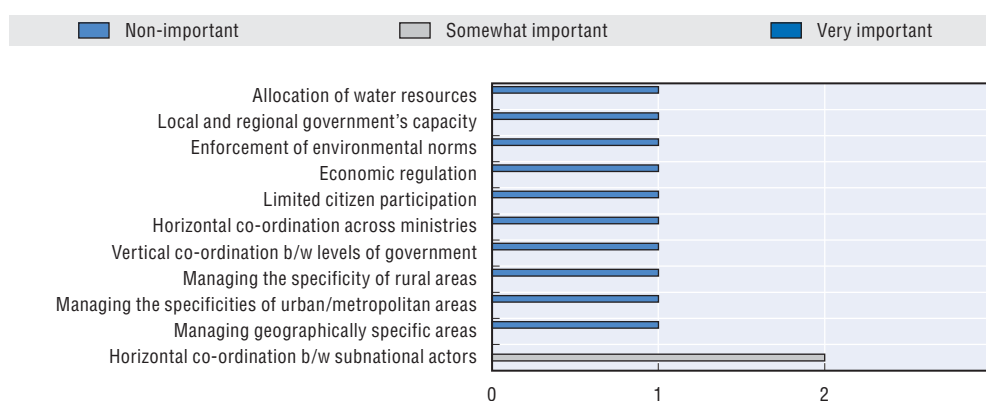
Existing mechanisms for co-ordination across different water actors at sub-national level	Yes	No	Details (name, example, contact information, website, capacity issues addressed, etc.)
Inter-municipal collaboration	X		Community of municipalities, community of agglomerations, urban community, etc. (<i>e.g.</i> Urban Community of Marseille Provence Métropole, www.marseille-provence.com)
Inter-municipal specific body	X		• Inter-municipal body (<i>e.g.</i> Syndicat intercommunal de la Vallée de la Bièvre, SIAVB, www.siavb.com) • Public Institution for Inter-municipality Co-operation (<i>e.g.</i> Syndicat des eaux d'Île-de-France, SEDIF, administered by a committee of elected representatives from all 144 concerned municipalities, www.sedif.com) • Inter-departmental bodies (<i>e.g.</i> Inter-departmental body union for the sanitation of Paris agglomeration – Syndicat interdépartemental pour l'assainissement de l'agglomération parisienne, SIAAP, www.siaap.fr)
Specific incentives from central/regional government (in terms of rules, rewards and sanction mechanisms, budget allocation, etc.)	X		<i>E.g.</i> a bonus for good water treatment is paid by the Water Agency to the community, when the arrangements put in place avoid deterioration of water quality
Historical rules and traditions		X	
Specific mechanisms for conflict resolution	X		• Consultation among river basin committees and local water commissions, etc. • Enforcement of laws on public surveys • Enforcement of texts about public information and consultation
Informal co-operation around projects	X		
Joint financing	X		<i>E.g.</i> communities works for the upgrading of sewage treatment plants, which can be subsidised by the Water Agency, the Department, the Region, etc.
Metropolitan or regional water districts	X		Hydrographic districts of the Water Framework Directive
Other (specify)			

Tools for capacity building at sub-national level

Type of mechanism	Yes	No	n/a	Details (name, example, contact information, website, capacity issues addressed, etc.)
Broad governance mechanisms				
Collaboration with the private sector (know-how transfer, concession contracts, BOTs, etc.)	X			- Municipalities are in all cases responsible for the management and organisation of water services but may delegate to the private sector through a delegation of public service - The private operator will then provide its technical know-how
Financial incentives (specify from whom and for what)	X			Charges on water use (withdrawals and pollution) Grants (works for the upgrading sewage treatment plants, river basin management, reduction of agricultural pollution, etc.)
Performance indicators and targets holding local governments accountable	X			- Performance indicators set for the Water Agencies - Performance indicators set for public water supply and sanitation
Citizens' participation	X			- National Water Committee - River basin committee - Local Water Commission - Advisory Board of local public services users - Public debates, public surveys
Involvement of civil society organisations	X			- National Water committee - River basin committee - Local Water Commission - Advisory Board of local public services users - Public debates, public surveys
Databases (sharing information)	X			National Water Information System
Historical arrangements (water courts, etc.)		X		
Other (specify)				
Management mechanisms				
Training – Workshops – Conferences	X			- Training of technical and administrative staff of drinking water and sanitation services, including through the National Training Center for Water Professions managed by the International Water Office, www.oieau.org - Various conferences on water at all territorial levels
Specific performance monitoring mechanism for staff (teams or individuals)		X		
Other (specify)				

Final assessment of remaining challenges

France CG – Main challenges in water policy making



GREECE

Acronyms and abbreviations

DEI	Public Power Corporation
DEYATH	Company for domestic water and wastewater treatment of Thessalonik
EYDAP	Company for domestic water and wastewater treatment of greater Athens
MENVI	Ministry of Environment, Energy and Climate Change
MHSS	Ministry for Health and Social Solidarity
MINFRA	Ministry for Infrastructure, Transport and Networks
MINT	Ministry of Interior
MRDF	Ministry for Rural Development and Food
RA	Regional Authorities
RWD	Regional Water Directorates of Greece (one Water Directorate per Region)
SI	Secretariat of Inspectorate
SSW	Special Secretariat for Water

**Institutional mapping of water policy roles and responsibilities at central government level:
Allocation of roles across ministries and public agencies
Design and implementation of water policies**

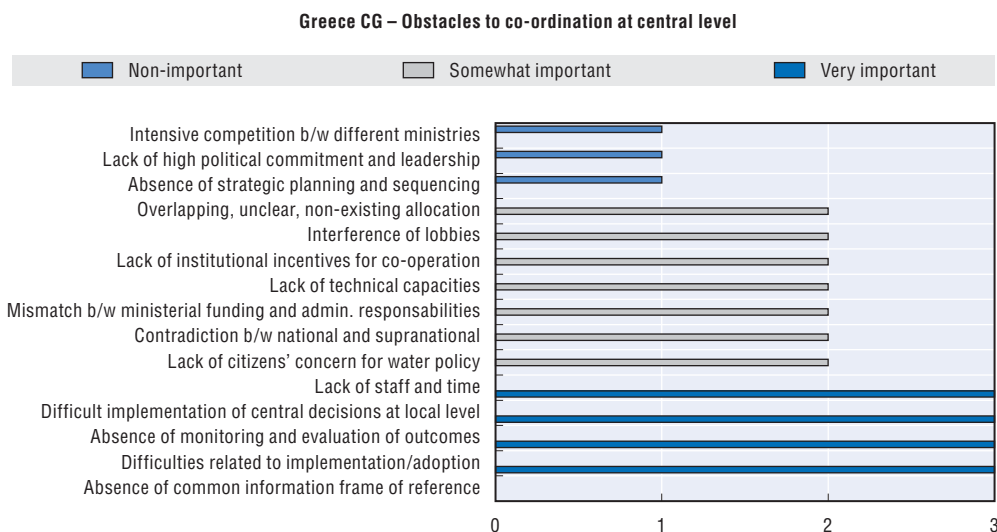
Roles	Areas	Water resources	Water services		
			Water supply		Waste water treatment
			Domestic	Agriculture	Industry
Strategy, priority setting, and planning (including infrastructure)		- The Special Secretariat for Water (SSW) of the Ministry for the Environment, Energy and Climate Change is responsible for policy making, information, planning, monitoring and evaluation of water resources, assisted at the regional level by the 13 Water Directorates of Greece (one Water Directorate per Region) - The Ministries for Infrastructure, Transport and Networks, Rural Development and Food, Interior, as well as regional authorities and major public companies such as DEI (Public Power Corporation) or EYDAP (the company for domestic water and wastewater treatment of greater Athens) are responsible for implementation	- In the greater Athens and Thessaloniki areas the companies EYDAP and DEYATH respectively are in charge of water supply - In all other municipalities water supply is ensured by municipal authorities or municipal companies	- Infrastructure for irrigation plans greater than 2 000 ha is ensured by the Ministry for Infrastructure, Transport and Net-works - For smaller plans the Ministry for Rural Development and Food is in charge	- In greater Athens and Thessaloniki the companies EYDAP and DEYATH respectively are in charge of waste water treatment - In all other major municipalities waste water treatment is ensured by municipal companies
Policy-making and implementation			The responsibility for policy making, information etc belongs to the Ministry for Rural Development and competent regional or local Authorities in collaboration with the Special Secretariat for Water (S.S.W.) of the Ministry for the Environment, Energy and Climate Change		The Special Secretariat for Water is responsible for policy making and implementing, in accordance to European Dir. 91/271
Information, monitoring and evaluation					Wastewater treatment companies, either municipal or other and at a central level the Special Secretariat for Water (SSW)
Stakeholders engagement (citizens' awareness, etc.)					
Other (specify)					

Institutional mapping for quality standards and regulation

Roles	Areas	Water resources	Water services			
			Water supply		Wastewater treatment	
			Domestic	Agriculture		Industry
Allocation of uses		The Special Secretariat for Water (SSW)	EYDAP, EYATH, municipal authorities or municipal companies	Ministerial department <i>a)</i> greater than 2 000 ha: Ministry for Infrastructure, Trans-port and Net-works <i>b)</i> smaller plans: Ministry for Rural Development and Food	Regional Water Directorates	EYDAP, EYATH, municipal authorities or municipal companies
Quality standards		The Special Secretariat for Water (SSW)	Ministerial department (Ministry for health and social solidarity)	Ministerial department (Ministry for Rural Development and Food) in collaboration with the Special Secretariat for Water (SSW)	The Special Secretariat for Water (SSW) and Regional Water Directorates	The Special Secretariat for Water (SSW)
Compliance of service delivery commitment		The Special Secretariat for Water (SSW)	Regional Water Directorates EYDAP, EYATH, municipal authorities or municipal companies	Ministerial department (Ministry for Rural Development and Food) in collaboration with the Special Secretariat for Water (SSW)		Regional Water Directorates EYDAP, EYATH, municipal authorities or municipal companies
Economic regulation (tariffs, etc.)		The Special Secretariat for Water (SSW)				
Environmental regulation (enforcement of norms, etc.)		The Special Secretariat for Water (SSW)	Ministerial department (Ministry for health and social solidarity)		Secretariat of Inspectorate, Ministry of Environment, Energy, and Climate Change	Secretariat of Inspectorate, Ministry of Environment, Energy, and Climate Change
Other (specify)						

Co-ordination of water policy making across ministries and public agencies at central government level

Obstacles to horizontal co-ordination in water policy making



Existing mechanisms for co-ordinating the action across ministries and public agencies

Existing co-ordination mechanism across ministries/public agencies	Yes	No	Details (name, website, contact detail, description, examples, etc.)
A ministry of water			
A line ministry			
A central agency for water related issues	X		Special Secretariat for Water, within the Ministry of Environment, Energy and Climate Change, info@kyy.minenv.gr
An <i>ad hoc</i> high level structure (National Council, etc.)	X		National Council for Water (representative from 26 organisations, including political parties, water services, NGOs, stakeholders, etc.)
An inter-ministerial body (committee, commission, etc.)	X		National Committee for Water (seven related ministers, chaired by the Minister of Environment, Energy and Climate Change)
An inter-agency programme			
A co-ordination group of experts			
An inter-ministerial mechanism for addressing territorial water concerns			
Other (please specify)			
No specific co-ordination mechanism			

Institutional mapping of water policy roles and responsibilities at sub-national level: Allocation of roles across local and regional authorities

Allocation of roles and responsibilities in water policy design and implementation at territorial level

Actors at sub-national level	Areas	Water resources	Water services		
			Water supply		Wastewater treatment
			Domestic	Agriculture	Industry
Municipalities			X		
Regions (provinces, states in federal countries, autonomous regions, cantons, etc.)		X		X	X
Inter-municipal bodies					
Water specific bodies (e.g. elected water boards, etc.)					
River basin organisations		X			
Other (specify)					

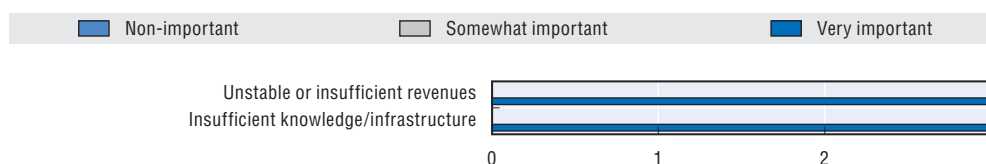
Allocation of roles and responsibilities in water regulation (rule production and enforcement)

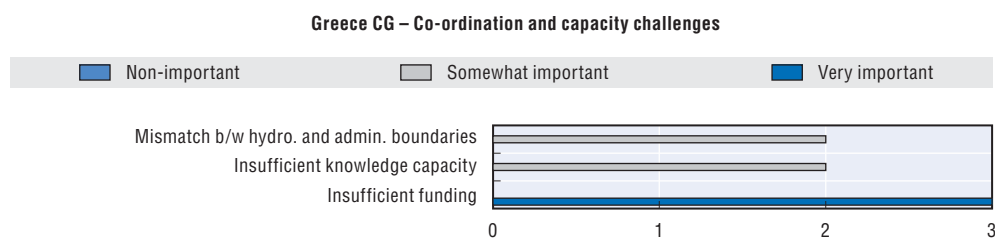
Roles	Areas	Water resources	Water services		
			Water supply		Wastewater treatment
			Domestic	Agriculture	Industry
Allocation of uses		Regional Water Directorates			
Quality standards					
Compliance of service delivery commitment					
Economic regulation (tariffs, etc.)					
Environmental regulation (enforcement of norms, etc.)					
Control at sub-national level of national regulations' enforcement					
Other (specify)					

Co-ordination of water policy making between levels of government and across local actors

Obstacles to vertical co-ordination in water policy making

Greece CG – Obstacles for vertical co-ordination



Obstacles to capacity building and co-ordination at territorial level*Existing mechanisms for co-ordinating water policy between levels of government and at territorial level*

Not informed.

Specific focus on selected mechanisms**River basin organisations: Constituencies, missions, monitoring, financing**

Constituencies			
Type of actor or institution	Name		
Central government ministries or public agencies	Ministry of Environment, Energy and Climate Change		
Local and regional authorities	Districts		
Private companies/actors			
Citizens and NGOs			
Missions			
Functions	Yes	No	Details
Monitoring	X		
Co-ordination			
Regulation	X		
Data collection	X		
Pollution prevention	X		
Harmonisation of water policies at basin level	X		
Allocation of uses	X		
Planning	X		
Financing	X		
Infrastructure	x		
Other			
Monitoring			
The Special Secretariat for Water (S.S.W.)			
Financing			
Type	Details		
Autonomous budget	Yes		
Grants from sub-national governments	Yes		

Tools to manage the interface between actors at sub-national level

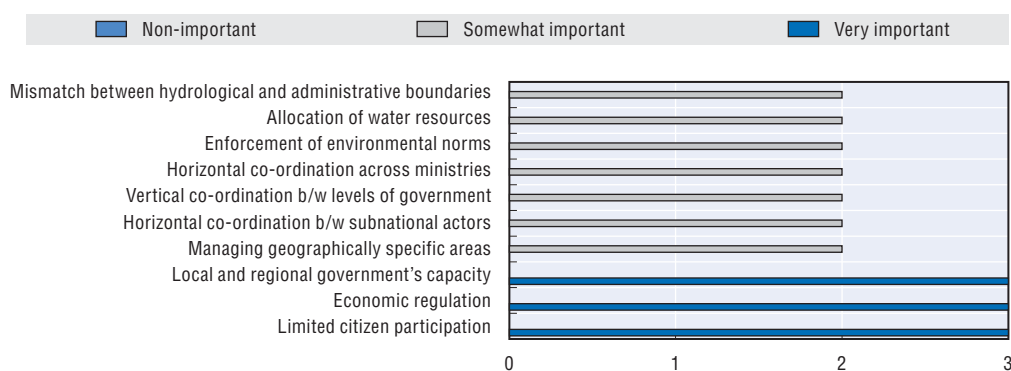
Existing mechanisms for co-ordination across different water actors at sub-national level	Yes	No	n/a	Details (name, example, contact information, website, capacity issues addressed, etc.)
Inter-municipal collaboration	X			
Inter-municipal specific body				
Specific incentives from central/regional government (in terms of rules, rewards and sanction mechanisms, budget allocation, etc.)	X			
Historical rules and traditions				
Specific mechanisms for conflict resolution				
Informal co-operation around projects				
Joint financing				
Metropolitan or regional water districts	X			
Other (specify)				

Tools for capacity building at sub-national level

Type of mechanism	Yes	No	n/a	Details (name, example, contact information, website, capacity issues addressed, etc.)
Broad governance mechanisms				
Collaboration with the private sector (know-how transfer, concession contracts, BOTs, etc.)	X			
Financial incentives (specify from whom and for what)				
Performance indicators and targets holding local governments accountable	X			
Citizens' participation	X			
Involvement of civil society organisations	X			
Databases (sharing information)	X			
Historical arrangements (water courts, etc.)				
Other (specify)				
Management mechanisms				
Training – Workshops – Conferences	X			
Specific performance monitoring mechanism for staff (teams or individuals)				
Other (specify)				

Final assessment of remaining challenges

Greece CG – Main challenges in water policy making



ISRAEL

Acronyms and abbreviations

IWA	Israeli Water Authority
MOA	Ministry of Agriculture
MOEP	Ministry of Environmental Protection
MOF	Ministry of Finance
MOH	Ministry of Health
WAC	Water Authority Council

Institutional mapping of water policy roles and responsibilities at central government level:
Allocation of roles across ministries and public agencies

Design and implementation of water policies

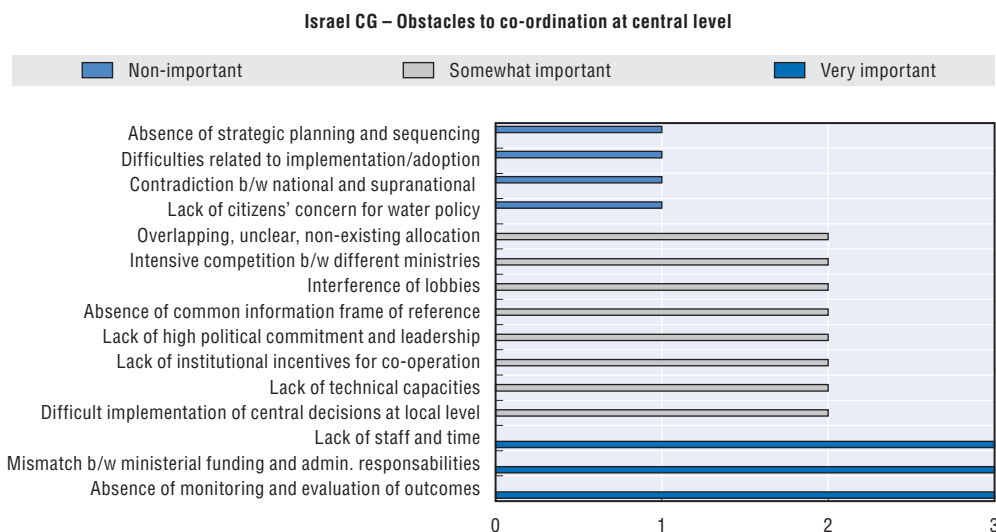
Roles	Areas	Water resources	Water services			
			Water supply			Wastewater treatment
			Domestic	Agriculture	Industry	
Strategy, priority setting, and planning (including infrastructure)		IWA, MOEP (nature-requirements)	IWA	IWA	IWA	IWA, MOH, MOEP
Policy-making and implementation		IWA	IWA	IWA	IWA	IWA, MOH, MOEP
Information, monitoring and evaluation		IWA (water provisions), MOEP (env conditions), MOH (health quality)	IWA(all areas), MOEP (soil), MOH (all areas)	IWA (all areas), MOEP (soil), MOH (all areas)	IWA (all areas), MOEP (soil), MOH (all areas)	IWA, MOH, MOEP
Stakeholders engagement (citizens' awareness, etc.)		IWA, MOEP, Ministry of Health	IWA, MOEP, MOH	IWA, MOEP, MOH	IWA, MOEP, MOH	IWA, MOEP, MOH
Other (specify)						

Institutional mapping for quality standards and regulation

Roles	Areas	Water resources	Water services			
			Water supply			Wastewater treatment
			Domestic	Agriculture	Industry	
Allocation of uses		IWA	IWA	IWA, MOA	IWA	IWA
Quality standards		IWA, MOEP, MOH	IWA, MOEP, MOH	IWA, MOEP, MOH	IWA, MOEP, MOH	IWA, MOEP, MOH
Compliance of service delivery commitment		IWA	IWA	IWA, MOA	IWA	IWA
Economic regulation (tariffs, etc.)		IWA	IWA	IWA	IWA	IWA
Environmental regulation (enforcement of norms, etc.)		IWA and MOEP	IWA and MOEP	IWA and MOEP	IWA and MOEP	IWA and MOEP
Other (specify)						

Co-ordination of water policy making across ministries and public agencies at central government level

Obstacles to horizontal co-ordination in water policy making



Existing mechanisms for co-ordinating the action across ministries and public agencies

Existing co-ordination mechanism across ministries/public agencies	Yes	No	Details (name, website, contact detail, description, examples, etc.)
A ministry of water		X	
A line ministry	X		Israeli Water Authority, www.water.gov.il • Contact: Mr. Miki Zaide at michaelz10@water.gov.il
A central agency for water related issues	X		Israeli Water Authority, as above
An <i>ad hoc</i> high level structure (National Council, etc.)		X	Water Authority Council, www.energy.gov.il/mni/en-US/Water/Messages/SpokesmanReformintheWaterNetwork.htm • Contact: Mr. Miki Zaide at michaelz10@water.gov.il
An inter-ministerial body (committee, commission, etc.)	X		Water Authority Council, as above
An inter-agency programme		X	
A co-ordination group of experts		X	
An inter-ministerial mechanism for addressing territorial water concerns			Israeli Water Authority, for national and international Joint Water Commission, Israel and the Palestinian Authority
Other (please specify)		X	
No specific co-ordination mechanism			

Institutional mapping of water policy roles and responsibilities at sub-national level: Allocation of roles across local and regional authorities

Allocation of roles and responsibilities in water policy design and implementation at territorial level

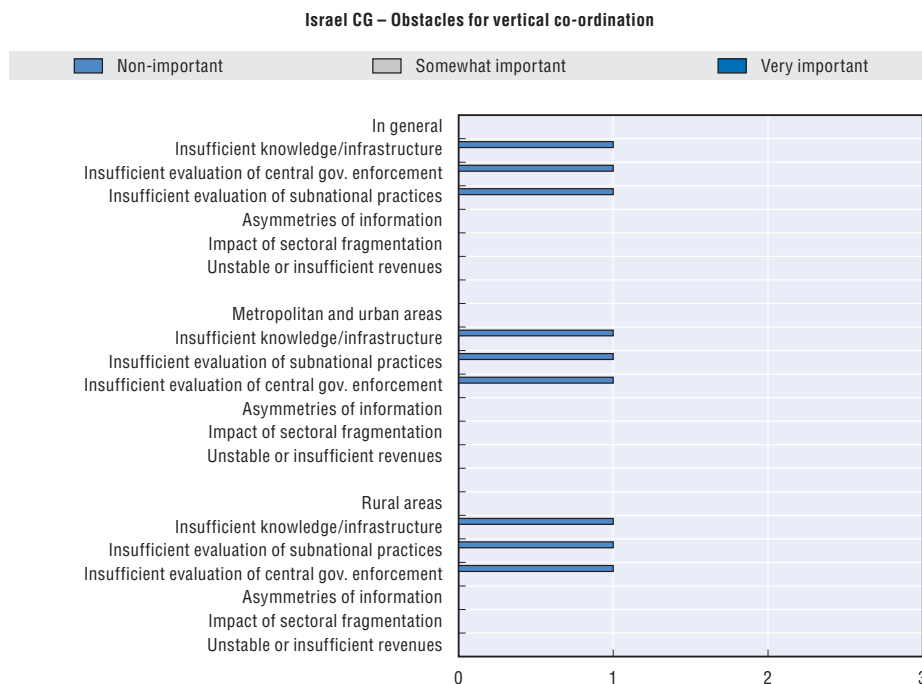
All water supply and wastewater treatment is nationally managed by the Israeli Water Authority (IWA), and nationally governed by the Water Authority Council (WAC). This central governing system is applied directly to municipalities, river basins, and any other portions of the State of Israel.

Allocation of roles and responsibilities in water regulation (rule production and enforcement)

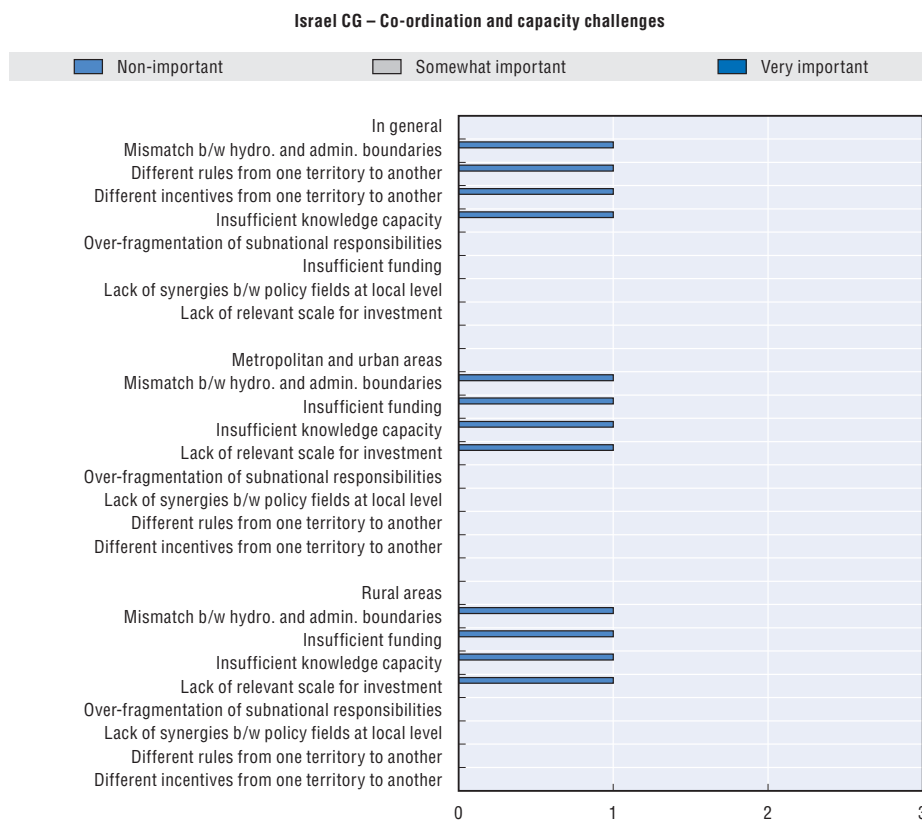
Control of water occurs only at a national level in the State of Israel. There is no sub-national level regulatory body for water in Israel. Municipalities act as intermediary consumers, purchasing water from the national system, and supplying it to all of the consumers within each of their respective municipal boundaries. Individuals' consumption is measured by their own water meter (compulsory throughout the country), and they pay a nationally-specified amount per unit volume of water.

Co-ordination of water policy making between levels of government and across local actors

Obstacles to vertical co-ordination in water policy making



Obstacles to capacity building and co-ordination at territorial level



Existing mechanisms for co-ordinating water policy between levels of government and at territorial level

Existing mechanism for vertical co-ordination and territorial effectiveness in water policy	Yes	No	n/a	Details (contact information, website, etc.)
River basin organisations/agencies			X	No need for vertical co-ordination as sub-national governments have no role in the water sector
Regulations for sharing roles between actors			X	
Co-ordination agency or commission			X	
Contractual arrangements (between central and local governments, central and regional governments, regional and local governments)			X	
Intermediate bodies or actors (e.g. state territorial representatives)			X	
Financial transfers or incentives			X	
Performance indicators			X	
Shared databases			X	
Sectoral conferences between central and sub-national water players			X	
Multi-sectoral conferences			X	
Consultation of private stakeholders (profit and non-profit actors)			X	
Other (specify)				

Specific focus on selected mechanisms

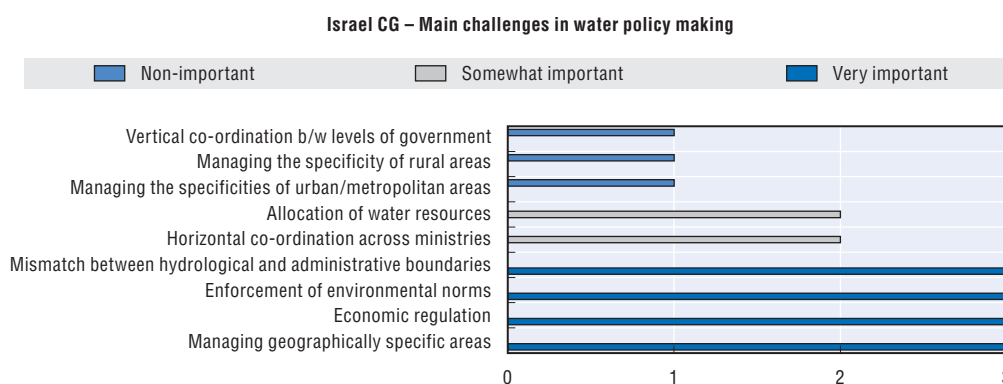
Tools to manage the interface between actors at sub-national level

Existing mechanisms for co-ordination across different water actors at sub-national level	Yes	No	n/a	Details (name, example, contact information, website, capacity issues addressed, etc.)
Inter-municipal collaboration			X	No need as sub-national governments have no role in the water sector
Inter-municipal specific body			X	
Specific incentives from central/regional government (in terms of rules, rewards and sanction mechanisms, budget allocation, etc.)			X	
Historical rules and traditions			X	
Specific mechanisms for conflict resolution			X	
Informal co-operation around projects			X	
Joint financing			X	
Metropolitan or regional water districts			X	
Other (specify)			X	

Tools for capacity building at sub-national level

Type of mechanism	Yes	No	n/a	Details (name, example, contact information, website, capacity issues addressed, etc.)
Broad governance mechanisms				
Collaboration with the private sector (know-how transfer, concession contracts, BOTs, etc.)			X	
Financial incentives (specify from whom and for what)			X	
Performance indicators and targets holding local governments accountable		X		This would be useful to ensure that at a municipal level, policies and regulations are adhered to. This will hopefully be implemented in the future
Citizens' participation			X	
Involvement of civil society organisations			X	
Databases (sharing information)			X	
Historical arrangements (water courts, etc.)			X	
Other (specify)				
Management mechanisms				
Training – Workshops – Conferences			X	
Specific performance monitoring mechanism for staff (teams or individuals)			X	
Other (specify)				

Final assessment of remaining challenges



ITALY

Acronyms and abbreviations

AATO	<i>Autorita' di Ambito Territoriale Ottimale</i> (Inter-municipal bodies)
ARPA	<i>Agenzia Regionale di Protezione Ambientale</i> (Regional Environmental protection Agencies)
ASL	<i>Azienda sanitaria locale</i> (Local health agencies)
CIPE	Inter-ministerial Committee for the Economic Planning
CONVIRI	<i>CO.N.VI.RI. – Commissione Nazionale di Vigilanza sulle Risorse Idriche</i> (National Committee supervising the use of water resources)
ISPRA	<i>Istituto Superiore per la Protezione e la Ricerca Ambientale</i> (The Institute for Environmental Protection and Research)
MAGRI	Ministry of Agricultural, Food and Forestry Policies
MECODEV	Ministry of Economic Development
MENVI (DTW)	Ministry for the environment, land and sea – Directorate for Territory and Water Resources
MENVI	Ministry for the environment, land and sea
MHEALTH	Ministry of Health
MINFRA	Ministry of Infrastructure and Transport
NARS	Acting Regulatory Unit for Non-energy Non-telecom public utilities

Institutional mapping of water policy at central government level: Allocation of roles across ministries and public agencies

Design and implementation of water policies

Roles	Areas	Water resources	Water services		
			Water supply		
			Domestic	Agriculture	Industry
Strategy, priority setting, and planning (including infrastructure)		Ministry for the Environment, Land and Sea Inter-ministerial Committee for the Economic Planning (CIPE) Ministry of Infrastructure and Transport	Ministry for the Environment, Land and Sea Ministry of Health	Ministry of Agricultural, Food and Forestry Policies	Ministry of Economic Development
Policy-making and implementation		Ministry for the Environment, Land and Sea	Ministry for the Environment, Land and Sea	Ministry of Agricultural, Food and Forestry Policies	Ministry of Economic Development
Information, monitoring and evaluation		National Committee supervising the use of water resources (<i>CO.N.VI.RI. – Commissione Nazionale di Vigilanza sulle Risorse Idriche</i>)	CO.N.VI.RI.	Ministry of Agricultural, Food and Forestry Policies	Ministry of Economic Development
Stakeholders engagement (citizens' awareness, etc.)					
Other (specify)					

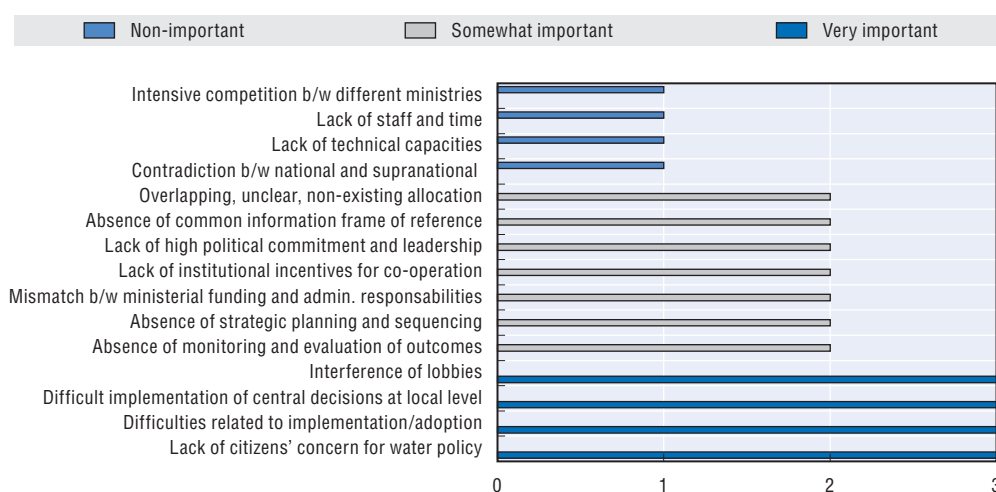
Institutional mapping for quality standards and regulation

Roles	Areas	Water resources	Water services			
			Water supply			Wastewater treatment
			Domestic	Agriculture	Industry	
Allocation of uses						
Quality standards		Ministry for the Environment, Land and Sea The Institute for Environmental Protection and Research, (<i>ISPRA – Istituto Superiore per la Protezione e la Ricerca Ambientale</i>)				
Compliance of service delivery commitment						
Economic regulation (tariffs, etc.)		Ministry for the Environment, Land and Sea Inter-ministerial Committee for the Economic Planning (CIPE)	Inter-ministerial Committee for the Economic Planning (CIPE) – Acting Regulatory Unit for Non-energy Non-telecom Public Utilities (NARS)			
Environmental regulation (enforcement of norms, etc.)		Ministry for the Environment, Land and Sea – Directorate for Territory and Water Resources	Ministry for the Environment, Land and Sea – Directorate for Territory and Water Resources	Ministry for the Environment, Land and Sea – Directorate for Territory and Water Resources	Ministry for the Environment, Land and Sea – Directorate for Territory and Water Resources	Ministry for the Environment, Land and Sea – Directorate for Territory and Water Resources
Other (specify)						

Co-ordination of water policy making across ministries and public agencies at central government level

Obstacles to horizontal co-ordination in water policy making

Italy – Obstacles to co-ordination at central level



Existing mechanisms for co-ordinating the action across ministries and public agencies

Existing co-ordination mechanism across ministries/public agencies	Yes	No	Details (name, website, contact detail, description, examples, etc.)
A ministry of water	X		Ministry for the Environment, Land and Sea, www.minambiente.it
A line ministry	X		Ministry of Infrastructure and Transport, www.mit.gov.it/mit/site.php
A central agency for water related issues		X	
An <i>ad hoc</i> high level structure (National Council, etc.)	X		National Committee supervising the use of water resources (CO.N.VI.RI.), www.conviri.it
An inter-ministerial body (committee, commission, etc.)	X		Inter-ministerial Committee for the Economic Planning (CIPE), www.cipecomitato.it
An inter-agency programme		X	
A co-ordination group of experts		X	
An inter-ministerial mechanism for addressing territorial water concerns		X	
Other (please specify)			
No specific co-ordination mechanism			

Institutional mapping of water policy roles and responsibilities at sub-national level: Allocation of roles across local and regional authorities**Allocation of roles and responsibilities in water policy design and implementation at territorial level**

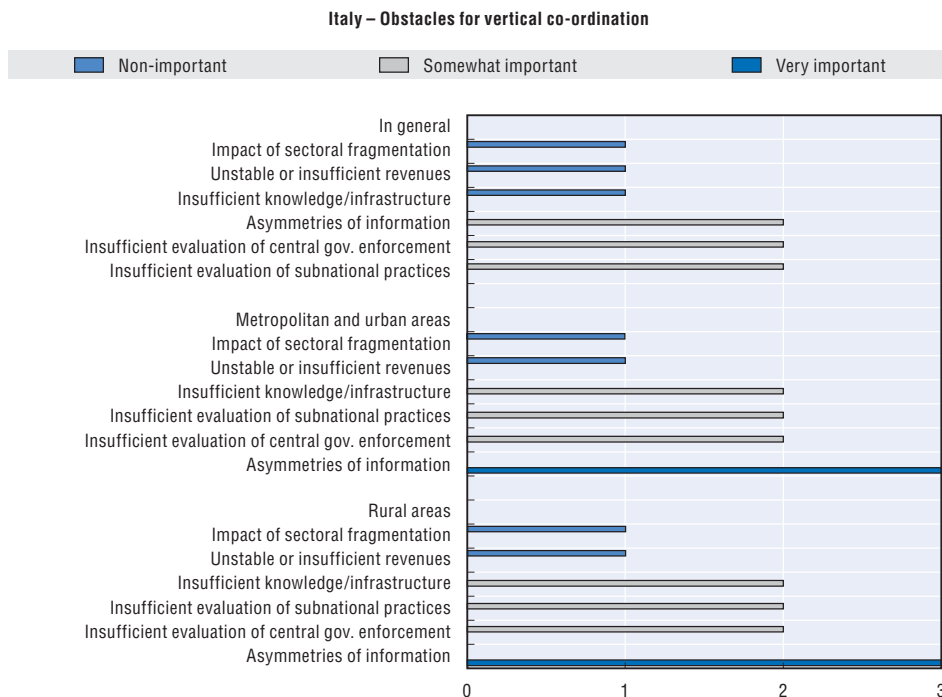
Areas	Water resources	Water services			
		Water supply			Wastewater treatment
		Domestic	Agriculture	Industry	
Actors at sub-national level					
Municipalities	No	Yes	No	No	Yes
Regions (provinces, states in federal countries, autonomous regions, cantons, etc.)	Yes	No	Yes	No	Yes
Inter-municipal bodies	Yes	Yes	Yes	Yes	Yes
Water specific bodies (e.g. elected water boards, etc.)	Yes	No	Yes	Yes	Yes
River basin organisations	Yes	No	Yes	Yes	No
Other (specify)					

Allocation of roles and responsibilities in water regulation (rule production and enforcement)

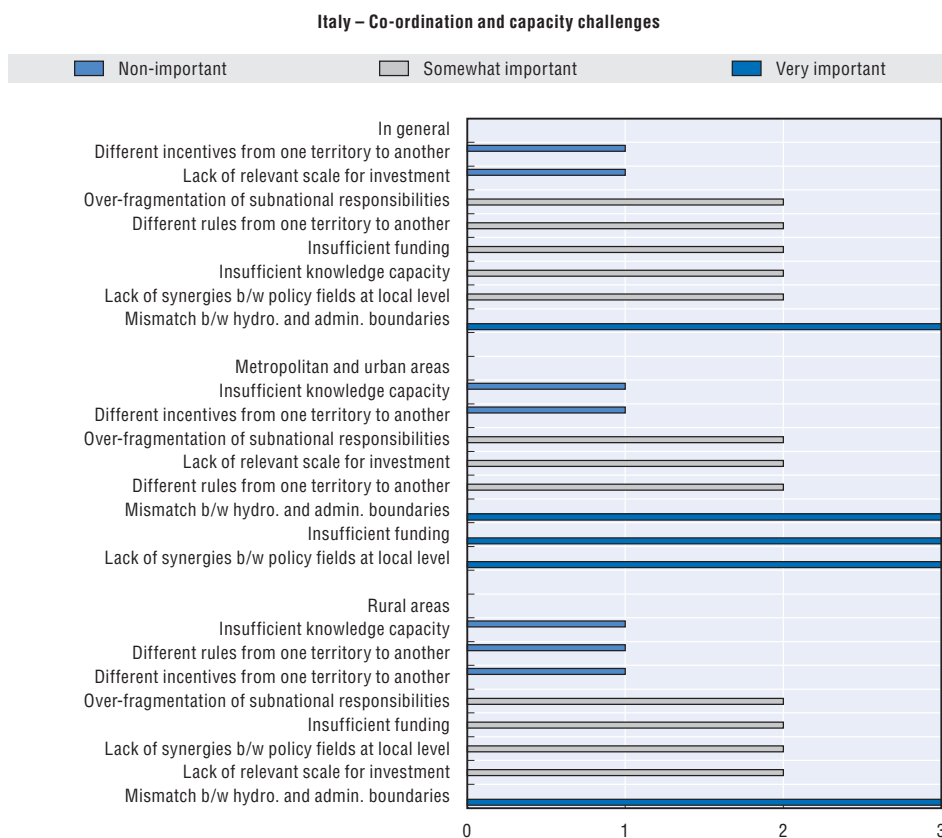
Roles	Areas	Water resources	Water services			
			Water supply			Wastewater treatment
			Domestic	Agriculture	Industry	
Allocation of uses		• Regions • River basin organisations (Basin authority) • Water specific bodies	• Regions • Municipalities • Inter-municipal bodies (Optimal Territorial Area Authority – <i>Autorità di Ambito Territoriale, AATO</i>)	• Regions • Land Reclamation Consortia	• Regions • Consortia for industrial areas	• Regions • Inter-municipal bodies (AATO)
Quality standards		• Regions	• Regions • Regional Agency for Environmental Protection (<i>Agenzia Regionale per la Protezione Ambientale, ARPA</i>)	• Regions • Regional Agency for Environmental Protection (ARPA)	• Regions • Regional Agency for Environmental Protection (ARPA)	• Regions • Regional Agency for Environmental Protection (ARPA)
Compliance of service delivery commitment		• Municipalities • Inter-municipal bodies (AATO) • Water specific bodies	• Municipalities • Inter-municipal bodies (AATO)	• Regions • Land Reclamation Consortia	• Regions • Consortia for industrial areas	• Regions • Inter-municipal bodies (AATO)
Economic regulation (tariffs, etc.)		• Regions • Inter-municipal bodies (AATO)	• Inter-municipal bodies (AATO)	• Regions • Land Reclamation Consortia	• Regions • Consortia for industrial areas	• Regions • Inter-municipal bodies (AATO)
Environmental regulation (enforcement of norms, etc.)		• Regions	• Regions	• Regions	• Regions	• Regions
Control at sub-national level of national regulations' enforcement		• Regions	• Regions • Municipalities • Inter-municipal bodies (AATO)	• Regions	• Regions	• Regions
Other (specify)						

Co-ordination of water policy making between levels of government and across local actors

Obstacles to vertical co-ordination in water policy making



Obstacles to capacity building and co-ordination at territorial level



Existing mechanisms for co-ordinating water policy between levels of government and at territorial level

Existing mechanism for vertical co-ordination and territorial effectiveness in water policy	Yes	No	n/a	Details (contact information, website, etc.)
River basin organisations/agencies	X			
Regulations for sharing roles between actors	X			
Co-ordination agency or commission	X			
Contractual arrangements (between central and local governments, central and regional governments, regional and local governments)	X			
Intermediate bodies or actors (<i>e.g.</i> state territorial representatives)	X			
Financial transfers or incentives	X			
Performance indicators	X			
Shared databases		X		
Sectoral conferences between central and sub-national water players		X		
Multi-sectoral conferences	X			
Consultation of private stakeholders (profit and non-profit actors)	X			
Other (specify)				

Specific focus on selected mechanisms**River basin organisations: Constituencies, missions, monitoring, financing**

Constituencies			
Type of actor or institution	Name		
Central government ministries or public agencies	Ministry for the Environment, Land and Sea – Ministry of Infrastructure and Transport – other Ministries (Agriculture, Ministry of Economic Development, etc.)		
Local and regional authorities	Region's Presidency – Territory and Environment Assessorship		
Private companies/actors	No		
Citizens and NGOs	No		
Other	No		
Missions			
Functions	Yes	No	Details
Monitoring			• Reference to District Authorities can be found in www.minambiente.it/opencms/opencms/home_it/home_acqua.html?lang=it&Ara=Acqua; www.direttivaacqua.minambiente.it/distretti_idrografici.html • Reference to Basin Authorities can be found in Regions' websites
	X		
Co-ordination	X		
Regulation	X		
Data collection	X		
Pollution prevention	X		
Harmonisation of water policies at basin level	X		
Allocation of uses	X		
Planning	X		
Financing		X	
Infrastructure construction		X	
Other			
Monitoring			
• Ministry for the Environment, Land and Sea – Directorate for Territory and Water Resources, www.minambiente.it • National Committee supervising the use of water resources (<i>CO.N.VI.RI. – Commissione Nazionale di Vigilanza sulle Risorse Idriche</i>), www.conviri.it			
Financing			
Type	Details		
Autonomous budget	No		
Grants from central government	Yes		
Grants from sub-national governments	Yes		

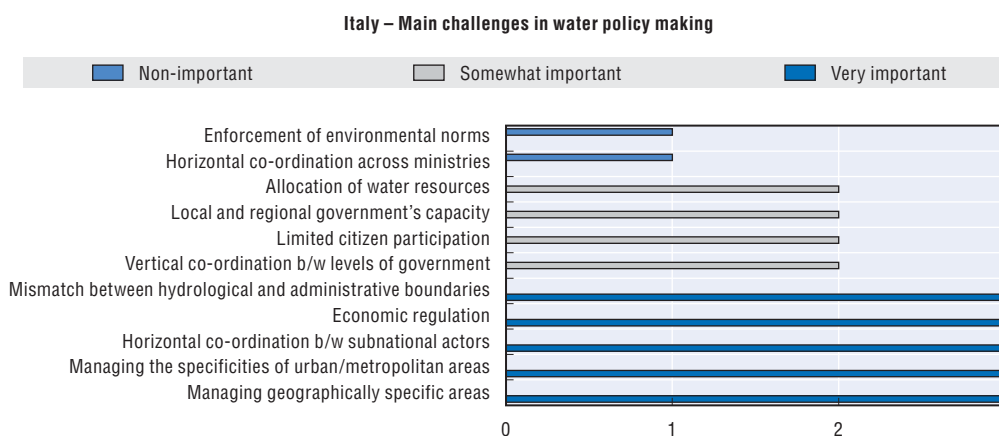
Tools to manage the interface between actors at sub-national level

Existing mechanisms for co-ordination across different water actors at sub-national level	Yes	No	n/a	Details (name, example, contact information, website, capacity issues addressed, etc.)
Inter-municipal collaboration	X			
Inter-municipal specific body	X			
Specific incentives from central/regional government (in terms of rules, rewards and sanction mechanisms, budget allocation, etc.)	X			
Historical rules and traditions	X			
Specific mechanisms for conflict resolution	X			
Informal co-operation around projects		X		
Joint financing		X		
Metropolitan or regional water districts	X			
Other (specify)				

Tools for capacity building at sub-national level

Type of mechanism	Yes	No	n/a	Details (name, example, contact information, website, capacity issues addressed, etc.)
Broad governance mechanisms				
Collaboration with the private sector (know-how transfer, concession contracts, BOTs, etc.)	X			In a number of districts
Financial incentives (specify from whom and for what)	X			For 2007-13, resources from the Operational Programme "Governance and Technical Assistance", co-funded by the European Regional Development Fund (ERDF) – For 2000-06, National Operating Programme for Technical Assistance
Performance indicators and targets holding local governments accountable	X			Measurable objectives and targets for essential services, www.dps.tesoro.it/obiettivi_servizio/eng/ml.asp
Citizens' participation		X		
Involvement of civil society organisations		X		
Databases (sharing information)		X		
Historical arrangements (water courts, etc.)		X		
Other (specify)				
Management mechanisms				
Training – Workshops – Conferences	X			Not sufficient
Specific performance monitoring mechanism for staff (teams or individuals)		X		
Other (specify)				

Final assessment of remaining challenges



JAPAN

Acronyms and abbreviations

MAGRI	Ministry of Agriculture, Forestry and Fisheries
MECON	Ministry of Economy, Trade and Industry
MENVI	Ministry of Environment
MHEALTH	Ministry of Health, Labour and Welfare
MLIT	Ministry of Land, Infrastructures and Transport: Water Resources Department

Institutional mapping of water policy roles and responsibilities at central government level: Allocation of roles across ministries and public agencies

Design and implementation of water policies

Organisation and Legislation Related to Water Resources Policy

In Japan, measures concerning water resources are implemented by a number of government ministries and agencies in co-operation, based on numerous laws. The Water Resources Department of the Ministry of Land, Infrastructure and Transport (MLIT) acts as the overall co-ordinator in adjusting measures for water supply and demand reservoir area development by related ministries and agencies as well as bureaus and departments.



Institutional mapping for quality standards and regulation

Not informed.

Co-ordination of water policy making across ministries and public agencies at central government level**Obstacles to horizontal co-ordination in water policy making**

Not informed.

Existing mechanisms for co-ordinating the action across ministries and public agencies

Existing co-ordination mechanism across ministries/public agencies	Yes	No	Details (name, website, contact detail, description, examples, etc.)
A ministry of water			• In regard to water resource policy, MLIT is responsible for inter-ministerial co-ordination • Other inter-ministerial meetings are organised as well for various water related issues
A line ministry			
A central agency for water related issues			
An <i>ad hoc</i> high level structure (National Council, etc.)			
An inter-ministerial body (committee, commission, etc.)			
An inter-agency programme			
A co-ordination group of experts			
An inter-ministerial mechanism for addressing territorial water concerns			
Other (please specify)			
No specific co-ordination mechanism			

Institutional mapping of water policy roles and responsibilities at sub-national level: Allocation of roles across local and regional authorities**Allocation of roles and responsibilities in water policy design and implementation at territorial level**

In general, municipalities are responsible for water supply and sewage. Distribution of responsibilities is however adjusted to territorial specificities and governance capacity in rural areas, for example.

In the case of agricultural water supply, subsidiary government organisation at sub-national level has roles and responsibilities in their territory in line with the policy or law of central government.

Allocation of roles and responsibilities in water regulation (rule production and enforcement)

Not informed.

Co-ordination of water policy making between levels of government and across local actors**Obstacles to vertical co-ordination in water policy making**

Not informed.

Obstacles to capacity building and co-ordination at territorial level

Not informed.

Existing mechanisms for co-ordinating water policy between levels of government and at territorial level

Existing mechanism for vertical co-ordination and territorial effectiveness in water policy	Yes	No	n/a	Details (contact information, website, etc.)
River basin organisations/agencies				
Regulations for sharing roles between actors	X			
Co-ordination agency or commission				
Contractual arrangements (between central and local governments, central and regional governments, regional and local governments)				
Intermediate bodies or actors (e.g. state territorial representatives)	X			
Financial transfers or incentives	X			
Performance indicators				
Shared databases	X			
Sectoral conferences between central and sub-national water players	X			
Multi-sectoral conferences				
Consultation of private stakeholders (profit and non-profit actors)	X			
Other (specify)				

Specific focus on selected mechanisms

Tools to manage the interface between actors at sub-national level

Existing mechanisms for co-ordination across different water actors at sub-national level	Yes	No	n/a	Details (name, example, contact information, website, capacity issues addressed, etc.)
Inter-municipal collaboration	X			
Inter-municipal specific body	X			
Specific incentives from central/regional government (in terms of rules, rewards and sanction mechanisms, budget allocation, etc.)	X			
Historical rules and traditions				
Specific mechanisms for conflict resolution				
Informal co-operation around projects	X			
Joint financing	X			
Metropolitan or regional water districts	X			
Other (specify)				

Tools for capacity building at sub-national level

Type of mechanism	Yes	No	n/a	Details (name, example, contact information, website, capacity issues addressed, etc.)
Broad governance mechanisms				
Collaboration with the private sector (know-how transfer, concession contracts, BOTs, etc.)	X			
Financial incentives (specify from whom and for what)	X			
Performance indicators and targets holding local governments accountable				
Citizens' participation	X			
Involvement of civil society organisations	X			
Databases (sharing information)	X			
Historical arrangements (water courts, etc.)				
Other (specify)				
Management mechanisms				
Training – Workshops – Conferences				
Specific performance monitoring mechanism for staff (teams or individuals)				
Other (specify)				

Final assessment of remaining challenges

Not informed.

KOREA

Acronyms and abbreviations

BEO	Basic Environmental Office
EMC	Environment Management Corporation
FCO	Flood Control Office
KR	Korea Rural Community Corporation
MKE	Ministry of knowledge and economy
MLTM	Ministry of Land, Transport and Maritime Affairs
MLTM-KWATER	Ministry of Land, Transport and Maritime Affairs – Korea Water Resources Corporation (K-Water)
MOE	Ministry of Environment
MOFAFF	Ministry of Food, Agriculture, Forestry and Fisheries
MOPAS	Ministry of Public Administration and Security
RMCA	Regional Construction Management Administration

**Institutional mapping of water policy roles and responsibilities at central government level:
Allocation of roles across ministries and public agencies**

Design and implementation of water policies

Roles	Water resources	Water services			
		Water supply			Wastewater treatment
		Domestic	Agriculture	Industry	
Strategy, priority setting, and planning (including infrastructure)	Ministry of Land, Transport and Maritime Affairs [MLTM (Korea Water Resources Corporation – K-Water)]	MLTM(K-Water), Ministry of Environment (MOE)	Ministry of Food, Agriculture, Forestry and Fisheries (MOFAFF), MLTM	MLTM (K-Water), Ministry of Knowledge and Economy (MKE)	MOE
Policy-making and implementation	MLTM (K-Water)	MLTM (K-Water), MOE	MOFAFF, MLTM	MLTM (K-Water), MKE	MOE
Information, monitoring and evaluation	MLTM	MLTM (K-Water), MOE, Ministry of Public Administration and Security (MOPAS)	MOFAFF	MLTM (K-Water), MKE	MOE
Stakeholders engagement (citizens' awareness, etc.)	MLTM	MLTM, MOE	MOFAFF	MLTM (K-Water), MKE	MOE
Other (specify)					

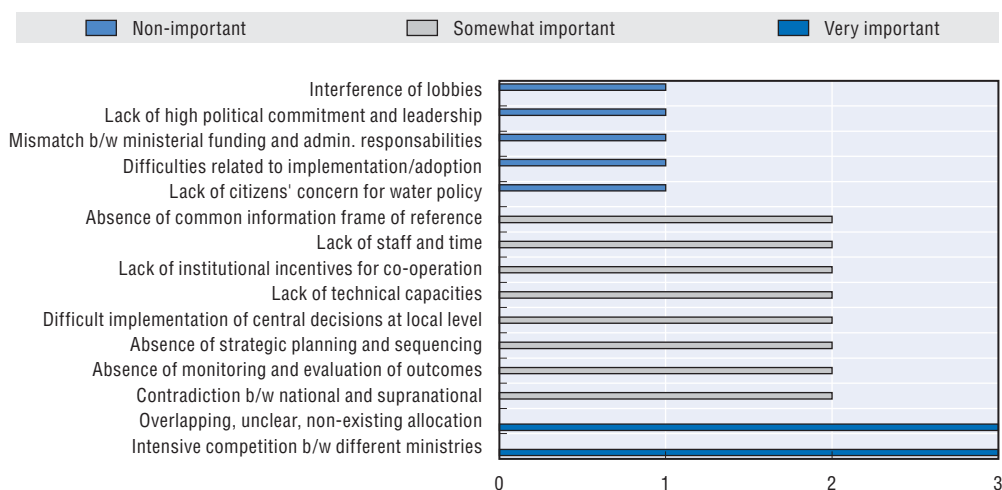
Institutional mapping for quality standards and regulation

Roles	Areas	Water resources	Water services			
			Water supply		Wastewater treatment	
			Domestic	Agriculture		Industry
Allocation of uses		MLTM	MLTM, MOE	MOFAFF	MLTM	MOE
Quality standards		MOE	MOE	MOE	MOE	MOE
Compliance of service delivery commitment		MLTM	MOE	MOFAFF	MLTM	MOE
Economic regulation (tariffs, etc.)		MLTM	MOPAS, MOE		MLTM	MOE
Environmental regulation (enforcement of norms, etc.)		MOE	MOE	MOE	MOE	MOE
Other (specify)						

Co-ordination of water policy making across ministries and public agencies at central government level

Obstacles to horizontal co-ordination in water policy making

Korea CG – Obstacles to co-ordination at central level



Existing mechanisms for co-ordinating the action across ministries and public agencies

Existing co-ordination mechanism across ministries/public agencies	Yes	No	Details (name, website, contact detail, description, examples, etc.)
A ministry of water		X	
A line ministry		X	
A central agency for water related issues		X	
An <i>ad hoc</i> high level structure (National Council, etc.)		X	
An inter-ministerial body (committee, commission, etc.)		X	
An inter-agency programme		X	
A co-ordination group of experts		X	
An inter-ministerial mechanism for addressing territorial water concerns		X	
Other (please specify)		X	
No specific co-ordination mechanism			

Institutional mapping of water policy roles and responsibilities at sub-national level: Allocation of roles across local and regional authorities

Allocation of roles and responsibilities in water policy design and implementation at territorial level

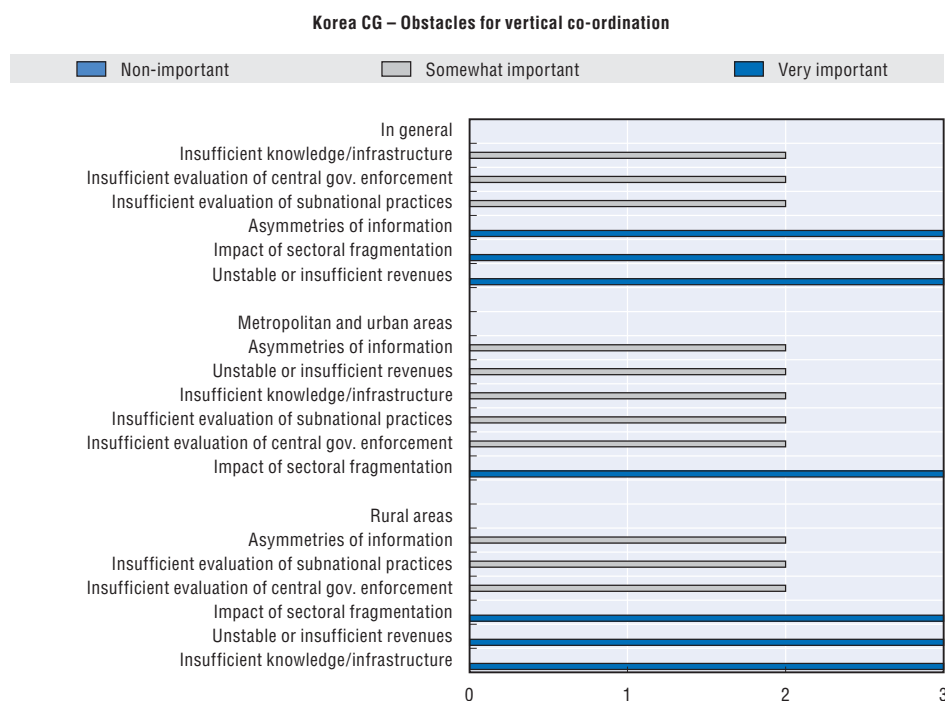
Areas	Water resources	Water services			
		Water supply			Wastewater treatment
		Domestic	Agriculture	Industry	
Actors at sub-national level					
Municipalities	o	o	o		o
Regions (provinces, states in federal countries, autonomous regions, cantons, etc.)					
Inter-municipal bodies					
Water specific bodies (e.g. elected water boards, etc.)	K-Water	K-Water, Environment Management Corporation (EMC)	Korea Rural Community Corporation (KR)	K-Water	EMC
River basin organisations					
Other (specify)					

Allocation of roles and responsibilities in water regulation (rule production and enforcement)

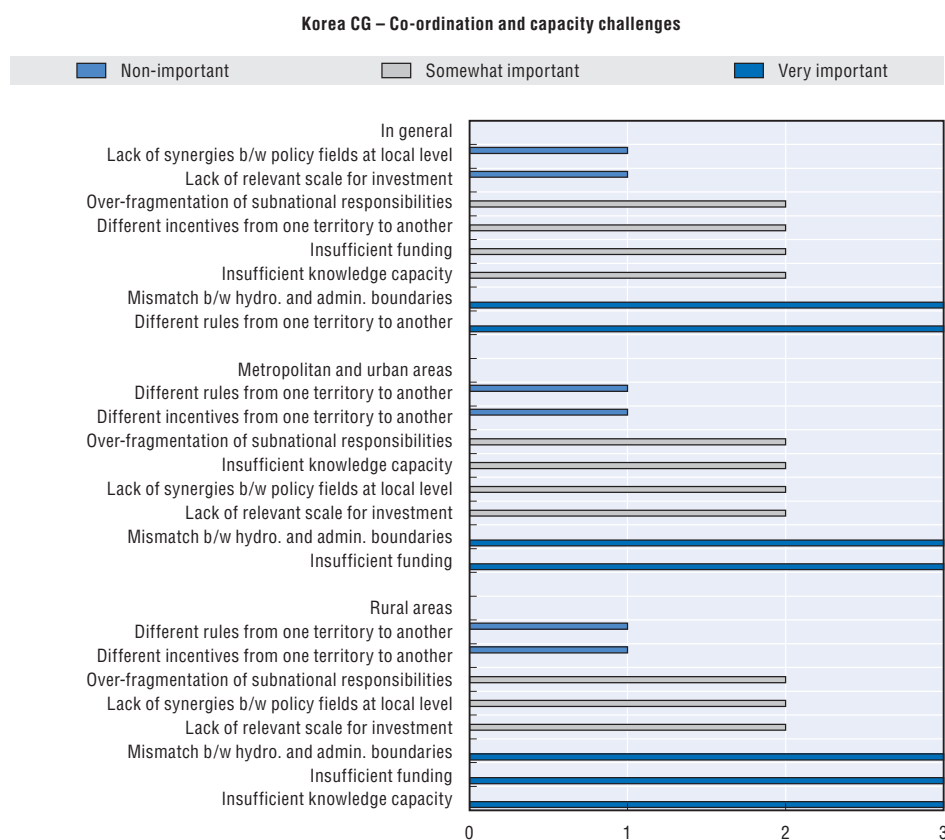
Area	Water resources	Water services			
		Water supply			Wastewater treatment
		Domestic	Agriculture	Industry	
Roles					
Allocation of uses	Regional Construction Management Administration (RCMA), Flood Control Office (FCO)	Municipalities	KR	K-Water	Municipalities
Quality standards	Basic Environmental Office	Basic Environmental Office	Basic Environmental Office	Basic Environmental Office	Basic Environmental Office
Compliance of service delivery commitment					
Economic regulation (tariffs, etc.)	Municipalities	Municipalities		Municipalities	Municipalities
Environmental regulation (enforcement of norms, etc.)	Basic Environmental Office				Basic Environmental Office
Control at sub-national level of national regulations' enforcement	Municipalities	Municipalities	Municipalities	Municipalities	Municipalities
Other (specify)					

Co-ordination of water policy making between levels of government and across local actors

Obstacles to vertical co-ordination in water policy making



Obstacles to capacity building and co-ordination at territorial level



Existing mechanisms for co-ordinating water policy between levels of government and at territorial level

Existing mechanism for vertical co-ordination and territorial effectiveness in water policy	Yes	No	n/a	Details (contact information, website, etc.)
River basin organisations/agencies		X		
Regulations for sharing roles between actors		X		
Co-ordination agency or commission	X			Central River Management Committee, Water System Management Committee
Contractual arrangements (between central and local governments, central and regional governments, regional and local governments)		X		
Intermediate bodies or actors (e.g. state territorial representatives)		X		
Financial transfers or incentives	X			Water System Fund
Performance indicators	X			www.mltm.go.kr
Shared databases	X			www.wamis.go.kr
Sectoral conferences between central and sub-national water players		X		
Multi-sectoral conferences		X		
Consultation of private stakeholders (profit and non-profit actors)	X			Korea River Association, Korea Water Resource Association, Korea Water and Wastewater Works Association, Korea Disaster Prevention Association
Other (specify)				Korea Water Forum

Specific focus on selected mechanisms

Tools to manage the interface between actors at sub-national level

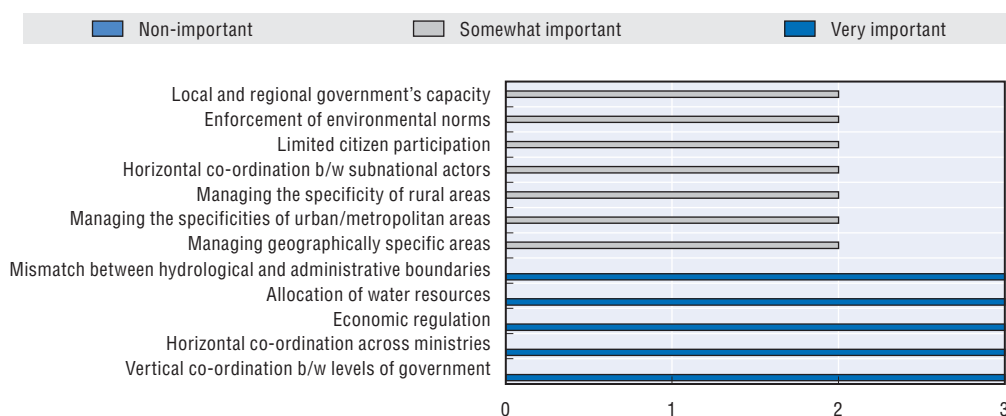
Existing mechanisms for co-ordination across different water actors at sub-national level	Yes	No	n/a	Details (name, example, contact information, website, capacity issues addressed, etc.)
Inter-municipal collaboration	X			Paldang River Basin Panel
Inter-municipal specific body	X			Consultative Group for the Water Quality Improvement of the Anyang River, www.guro.go.kr/anyang
Specific incentives from central/regional government (in terms of rules, rewards and sanction mechanisms, budget allocation, etc.)		X		
Historical rules and traditions		X		
Specific mechanisms for conflict resolution	X			Central River Management Committee
Informal co-operation around projects		X		
Joint financing		X		
Metropolitan or regional water districts		X		
Other (specify)				

Tools for capacity building at sub-national level

Type of mechanism	Yes	No	n/a	Details (name, example, contact information, website, capacity issues addressed, etc.)
Broad governance mechanisms				
Collaboration with the private sector (know-how transfer, concession contracts, BOTs, etc.)	X			MOE (Sewerage projects)
Financial incentives (specify from whom and for what)		X		
Performance indicators and targets holding local governments accountable	X			MOE (Water supply and sewerage evaluation indicators)
Citizens' participation	X			MLTM (Act on Construction of Dams)
Involvement of civil society organisations		X		
Databases (sharing information)	X			WAMIS
Historical arrangements (water courts, etc.)		X		
Other (specify)				
Management mechanisms				
Training – Workshops – Conferences	X			Chuncheon Water Forum, Gyeongnam Water Forum, Water Resources Policy Forum
Specific performance monitoring mechanism for staff (teams or individuals)	X			
Other (specify)				

Final assessment of remaining challenges

Korea CG – Main challenges in water policy making



MEXICO

Acronyms and abbreviations

CONAGUA	<i>Comisión Nacional del Agua</i> (National Water Commission)
Profepa	<i>Procuraduría Federal de Protección al Ambiente</i> (Federal Office for the Protection of the Environment)
Sagarpa	<i>Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación</i> (Ministry of Agriculture, Livestock, Rural Development, Food and Fisheries)
SE	<i>Secretaría de Economía</i> (Ministry of Economy)
Semarnat	<i>Secretaría de Medio Ambiente y Recursos Naturales</i> (Ministry of the Environment and Natural Resources)
SS	<i>Secretaría de Salud</i> (Ministry of Health)

Institutional mapping of water policy roles and responsibilities at central government level: Allocation of roles across ministries and public agencies

Design and implementation of water policies

Roles	Area	Water resources	Water services		
			Water supply		Wastewater treatment
			Domestic	Agriculture	Industry
Strategy, priority setting, and planning (including infrastructure)		CONAGUA, Sagarpa, Semarnat	CONAGUA, SS		CONAGUA
Policy-making and implementation		CONAGUA, Sagarpa, Semarnat	CONAGUA, SS		CONAGUA
Information, monitoring and evaluation		CONAGUA	CONAGUA, SS		CONAGUA
Stakeholders engagement (citizens' awareness, etc.)		CONAGUA, Sagarpa	CONAGUA		CONAGUA, SE
Other (to be specified)					

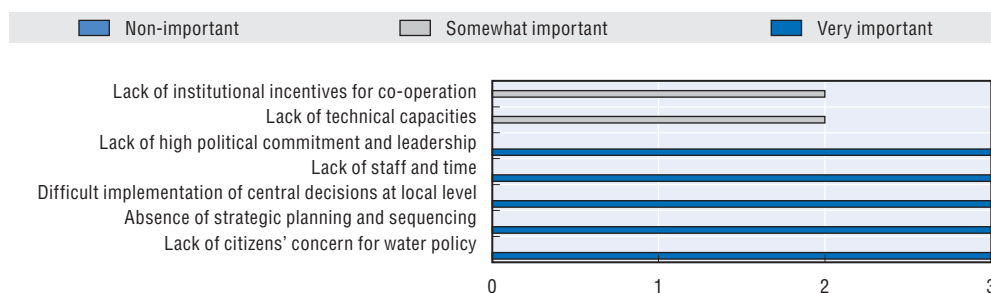
Institutional mapping for quality standards and regulation

Roles	Areas	Water resources	Water services		
			Water supply		Wastewater treatment
			Domestic	Agriculture	Industry
Allocation of uses		CONAGUA	CONAGUA		CONAGUA
Quality standards		Semarnat	SS		Semarnat
Compliance of service delivery commitment			CONAGUA		Semarnat
Economic regulation (tariffs, etc.)		CONAGUA			
Environmental regulation (enforcement of norms, etc.)		Semarnat, Profepa			Semarnat, Profepa
Other (specify)					

Co-ordination of water policy making across ministries and public agencies at central government level

Obstacles to horizontal co-ordination in water policy making

Mexico CG – Obstacles to co-ordination at central level



Existing mechanisms for co-ordinating the action across ministries and public agencies

Existing co-ordination mechanism across ministries/public agencies	Yes	No	Details (name, website, contact detail, description, examples, etc.)
A ministry of water		X	There is no Ministry of Water as such
A line ministry	X		Semarnat, www.semarnat.gob.mx • Contact: Mr. Alberto Ortega Almanza, Personal Assistant to the Head, aortega@semarnat.gob.mx
A central agency for water related issues	X		CONAGUA is a decentralised institution of Semarnat, www.CONAGUA.gob.mx • Contact: Mr. Carlos Marcos Morales Garduño, Personal Assistant to the Director-General, carlos.moralesg@CONAGUA.gob.mx
An <i>ad hoc</i> high level structure (National Council, etc.)	X		Technical Council of CONAGUA (Semarnat, Sedesol, Sagarpa, SS, SHCP, SE, Sener, SFP, IMTA, Conafor)
An inter-ministerial body (committee, commission, etc.)	X		Technical Council of CONAGUA (Semarnat, Sedesol, Sagarpa, SS, SHCP, SE, Sener, SFP, IMTA, Conafor)
An inter-agency programme	X		National Water Programme
A co-ordination group of experts	X		Technical Steering Committee for Hydraulic Works (CONAGUA, CFE, IMTA, IIUNAM)
An inter-ministerial mechanism for addressing territorial water concerns	X		• National Natural Disaster Fund • FONDEN • (Segob, SHCP, CONAGUA)
Other (specify)			
No specific co-ordination mechanism			

Institutional mapping of water policy roles and responsibilities at sub-national level: Allocation of roles across local and regional authorities

Allocation of roles and responsibilities in water policy design and implementation at territorial level

Areas	Water resources	Water services		
		Water supply		Wastewater treatment
		Domestic	Agriculture	Industry
Actors at sub-national level				
Municipalities	X	X		X
Regions (provinces, states in federal countries, autonomous regions, cantons, etc.)	X	X		X
Inter-municipal bodies	X	X		X
Water specific bodies (e.g. elected water boards, etc.)				
River basin organisations	X	X		X
Other (specify)				

Allocation of roles and responsibilities in water regulation (rule production and enforcement)

Areas	Water resources	Water services		
		Water supply		Wastewater treatment
		Domestic	Agriculture	Industry
Roles				
Allocation of uses		Municipality		Municipality
Quality standards		Regions (States)		Regions (States)
Compliance of service delivery commitment				
Economic regulation (tariffs, etc.)		• Municipality • Regions (States)		• Municipality • Regions (States)
Environmental regulation (enforcement of norms, etc.)		Regions (States)		Regions (States)
Control at sub-national level of national regulations' enforcement		Regions (States)		Regions (States)
Other (specify)				

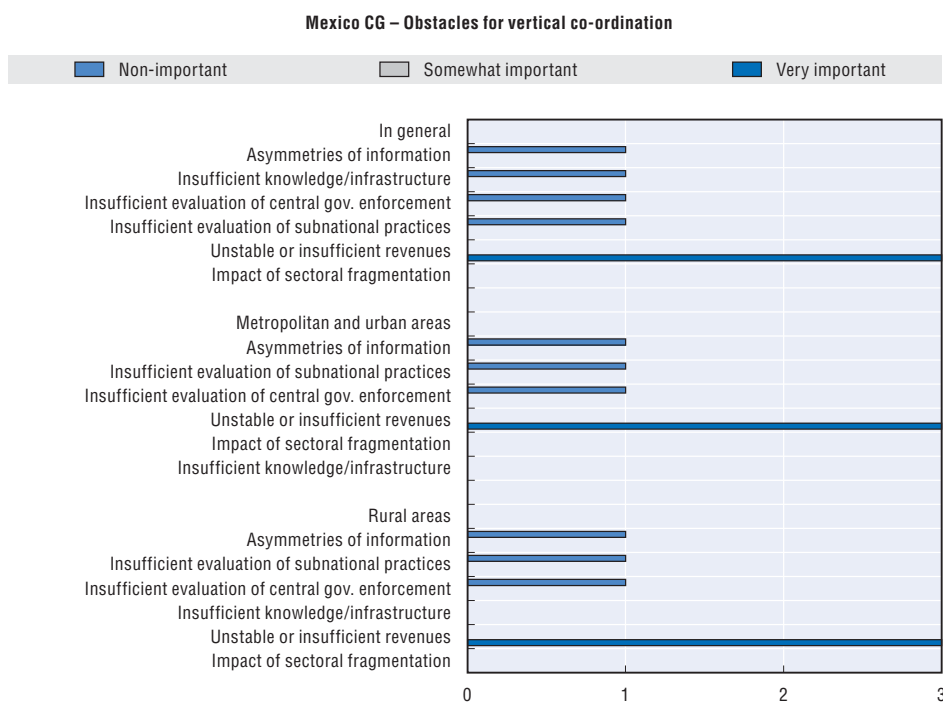
Co-ordination of water policy making between levels of government and across local actors

Specific focus on selected mechanisms

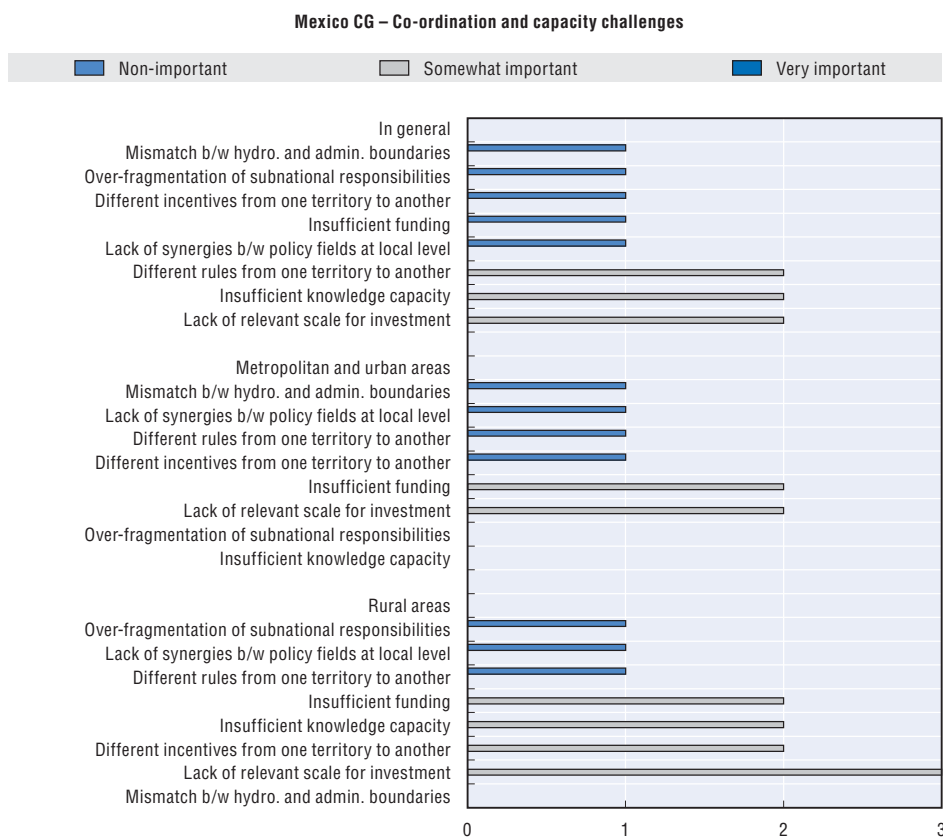
River basin organisations

Constituencies			
Type of actor or institution	Name		
Central government ministries or public agencies	No		
Local and regional authorities	No		
Private companies/actors	No		
Citizens and NGOs	No		
Other	The river basin councils report to the Monitoring Committee of the River Basin Council, which depends on a Joint Corporate Technical Working Group responsible for monitoring and evaluating the performance of the River Basin Council, specific working groups and other expert bodies required by the River Basin Council to better fulfill its mandate		
Missions			
Functions	Yes	No	Details
Monitoring	X		• The River Basin Agencies are federal bodies directly linked to the representative of CONAGUA and which resources and specific budget are determined by CONAGUA • The River Basin Councils are corporate bodies of mix composition which are the instance of co-ordination and discussion, support, consultation and advice between the CONAGUA, including the appropriate River Basin Agency, the agencies of the federal, state or municipal authorities, and representatives of water users and civil society organisations, from the respective river basin or hydrologic region
Co-ordination	X		
Regulation		X	
Data collection	X		
Pollution prevention	X		
Harmonization of water policies at basin level	X		
Allocation of uses	X		
Planning	X		
Financing			
Infrastructure construction			
Other			
Monitoring			
• River Basin Councils report to the Monitoring Committee of the River Basin Council, which depends on a Joint Corporate Technical Working Group responsible for monitoring and evaluating the performance of the River Basin Council, specific working groups and other expert bodies required by the River Basin Council to better fulfill its mandate • The Monitoring Committee of the River Basin Council, body of the River Basin Council itself, to which is attached a Joint Corporate Technical Working Group • The National Water Law, Article 13bis 1, clause C, www.CONAGUA.gob.mx/CONAGUA07/Noticias/Ley_Aguas_Nacionales.pdf			
Financing			
Type	Details		
Autonomous budget	No		
Grants from central government	Yes		
Grants from sub-national governments	Yes, the River Basin Councils are starting to get financed by the federation and the states for their operational work (meetings, studies), through an Operations Support Programme		

Obstacles to vertical co-ordination in water policy making



Obstacles to capacity building and co-ordination at territorial level



Existing mechanisms for co-ordinating water policy between levels of government and at territorial level

Existing mechanism for vertical co-ordination and territorial effectiveness in water policy	Yes	No	n/a	Details (contact information, website, etc.)
River basin organisations/agencies	X			River basin councils, www.consejosdecuenca.org.mx
Regulations for sharing roles between actors	X			National Water Law and Regulations Rules of organisation and functioning of river basin councils
Co-ordination agency or commission	X			CONAGUA, www.CONAGUA.gob.mx
Contractual arrangements (between central and local governments, central and regional governments, regional and local governments)	X			Yearly Co-ordination Conventions or Agreements between State and Federal Governments
Intermediate bodies or actors (e.g. state territorial representatives)	X			River basin agencies and local authorities of CONAGUA Incumbents of the federal bodies geographically pertaining to a river basin participate and vote in the appropriate river basin council, www.consejosdecuenca.org.mx
Financial transfers or incentives	X			Federal resources channelled through CONAGUA programs
Performance indicators	X			The National Water Program includes a series of key performance indicators at national level
Shared databases	X			The National Water Law calls for the establishment of a National System on water quantity, quality and uses, and similar regional systems, which are being created
Sectoral conferences between central and sub-national water players	X			Most of these conferences are organised by the associations: • AMH, www.amh.org.mx • ANEAS, www.aneas.com.mx
Multi-sectoral conferences	X			Most of them are organised by the CICM, www.cicm.org.mx
Consultation of private stakeholders (profit and non-profit actors)	X			The National Water Law takes into account the recommendations of the Water Advisory Council, an autonomous consultative body composed of individuals from the private and social sectors, scholars or persons who have a special awareness on the issues of water and its management, how to protect it and solve the related problems, all having an altruistic vocation and being highly recognised and respected, www.aguas.org.mx/sitio/index.html
Other (specify)				

Tools to manage the interface between actors at sub-national level

Existing mechanisms for co-ordination across different water actors at sub-national level	Yes	No	n/a	Details (name, example, contact information, website, capacity issues addressed, etc.)
Inter-municipal collaboration	X			ANEAS, www.aneas.com.mx
Inter-municipal specific body	X			E.g. INTERAPAS, www.interapas.com
Specific incentives from central/regional government (in terms of rules, rewards and sanction mechanisms, budget allocation, etc.)		X		
Historical rules and traditions		X		
Specific mechanisms for conflict resolution	X			National Water Law and Regulations
Informal co-operation around projects	X			TEQUIO ¹
Joint financing	X			E.g. Project El Realito ²
Metropolitan or regional water districts	X			Many cities have converted into metropolitan areas which include the participation of various municipalities, and even different states, as is the case for Mexico City (SACM, www.sacm.df.gob.mx)
Other (specify)				

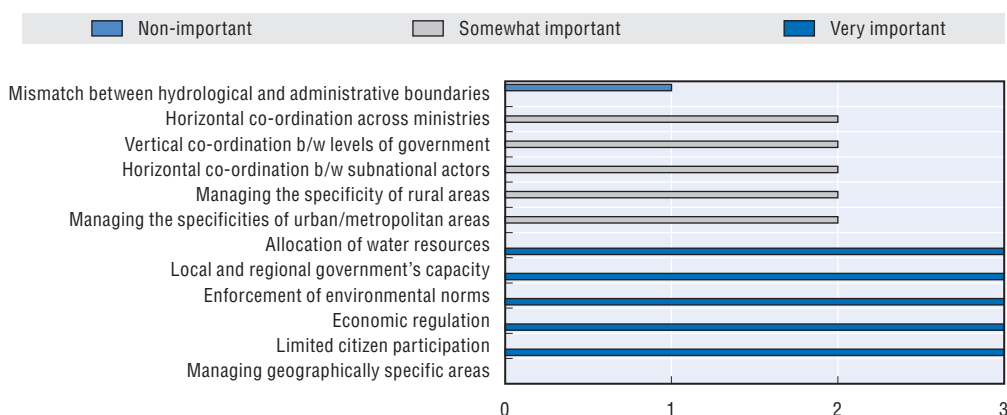
1. TEQUIO is an organised way to work towards a collective benefit and provides that members of a community must contribute through materials or labour to build a community work, for example a school, a well, a fence, a road, and so on. In the state of Oaxaca, tequio is recognised by state law and the state government has the duty to preserve it.
2. The National Water Commission and the Governments of the States of San Luis Potosi and Guanajuato developed this project to build a dam to regulate 2 m³/s, and this is used to supply drinking water to the metropolitan area of San Luis Potosi SLP, and Celaya, Gto. The federal government and the governments of both States participated in the funding for the dam, and the federal government and private investors for the related aqueduct.

Tools for capacity building at sub-national level

Type of mechanism	Yes	No	n/a	Details (name, example, contact information, website, capacity issues addressed, etc.)
Broad governance mechanisms				
Collaboration with the private sector (know-how transfer, concession contracts, BOTs, etc.)	X			- Promagua is a CONAGUA program which works as an additional source of resources - The modalities for private sector participation may be through a contract to provide complete or partial services, the establishment of a joint venture or through a concession
Financial incentives (specify from whom and for what)	X			
Performance indicators and targets holding local governments accountable	X			The characteristics of the support are included within the operating rules of federal programs, and these characteristics are based on the level of physical and commercial efficiency of the service providers
Citizens' participation	X			River Basin Councils, www.consejosdecuenca.org.mx
Involvement of civil society organisations	X			River Basin Councils, www.consejosdecuenca.org.mx
Databases (sharing information)	X			The "State of the Water, Sewerage and Sanitation Subsector" is published yearly by CONAGUA ANEAS, www.aneas.com.mx
Historical arrangements (water courts, etc.)		X		
Other (specify)				
Management mechanisms				
Training – Workshops – Conferences	X			- AMH, www.amh.org.mx - ANEAS, www.aneas.com.mx - CEMCAS, www.cemcas.com.mx - IMTA, www.imta.gob.mx
Specific performance monitoring mechanism for staff (teams or individuals)	X			ANEAS is implementing a system of technical standards for labour skills, training and skills certification ("CONoCER", i.e. knowledge) of the technical staff of services providers, usually formed as Operating Agencies www.aneas.com.mx www.conoce.gob.mx
Other (specify)				

Final assessment of remaining challenges

Mexico CG – Main challenges in water policy making



NETHERLANDS

Acronyms and abbreviations

MIE	Ministry of infrastructure and the Environment
Mtransport	Ministry of transport, public works and water management

Institutional mapping of water policy roles and responsibilities at central government level: Allocation of roles across ministries and public agencies

Design and implementation of water policies

Roles	Areas	Water resources	Water services		
			Water supply		Wastewater treatment
			Domestic	Agriculture	
Strategy, priority setting, and planning (including infrastructure)	• MIE	MIE	n/a	MIE	MIE
Policy-making and implementation	• policy making: MIE • Implementation: Directorate-General for Public Works and Water Management (part of MIE)	MIE	n/a	MIE	MIE
Information, monitoring and evaluation	• Information, monitoring, evaluation, MIE • Ground water quality: information, monitoring, evaluation, MIE • Ground water quantity: information, monitoring, evaluation, MIE	MIE	n/a		Supervision: inspectorate for Transport, Public Works and Water Management (part of MIE)
Stakeholders engagement (citizens' awareness, etc.)	• MIE	n/a (local)	n/a	n/a (local)	n/a (local)
Other (specify)					

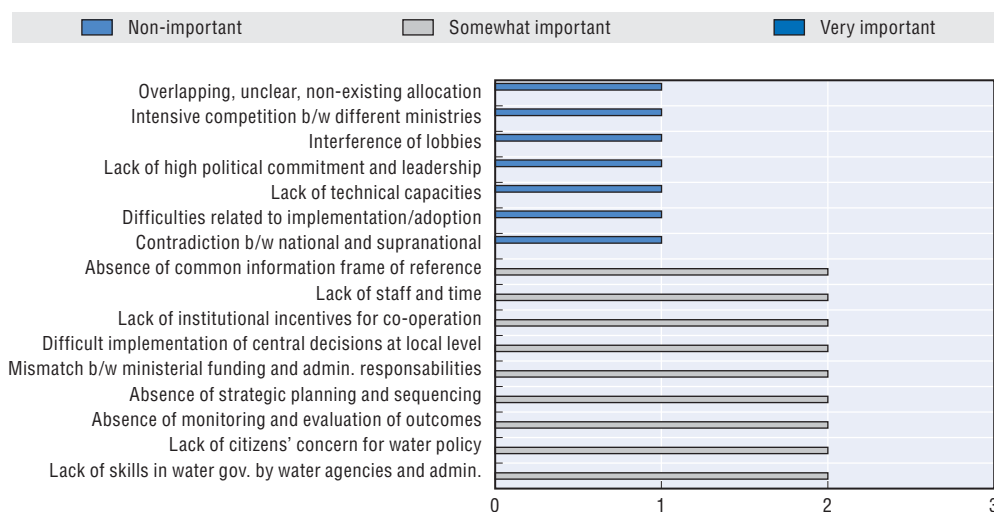
Institutional mapping for quality standards and regulation

Roles	Areas	Water resources	Water services		
			Water supply		Wastewater treatment
			Domestic	Agriculture	
Allocation of uses		MIE	Directorate-General for Public Works and Water Management	n/a	Directorate-General for Public Works and Water Management
Quality standards		MIE	MIE	n/a	Inspectorate for Housing, Spatial Planning and the Environment
Compliance of service delivery commitment		Directorate-General for Public Works and Water Management	Inspectorate for Housing, Spatial Planning and the Environment	n/a	Inspectorate for Housing, Spatial Planning and the Environment
Economic regulation (tariffs, etc.)		Not applicable	MIE	n/a	Inspectorate for Housing, Spatial Planning and the Environment
Environmental regulation (enforcement of norms, etc.)		Directorate-General for Public Works and Water Management Inspectorate for Transport, Public Works and Water Management (for the national water ways)	Inspectorate for Housing, Spatial Planning and the Environment	n/a	MIE
Other (specify)					Inspectorate for Transport, Public Works and Water Management

Co-ordination of water policy making across ministries and public agencies at central government level

Obstacles to horizontal co-ordination in water policy making

Netherlands – Obstacles to co-ordination at central level



Existing mechanisms for co-ordinating the action across ministries and public agencies

Existing co-ordination mechanism across ministries/public agencies	Yes	No	Details (name, website, contact detail, description, examples, etc.)
A ministry of water	X		Ministry of Transport, Public Works and Water Management, www.minvenw.nl
A line ministry		X	
A central agency for water related issues		X	
An <i>ad hoc</i> high level structure (National Council, etc.)		X	
An inter-ministerial body (committee, commission, etc.)	X		- National Water Consultation (ministries, union of provinces, union of municipalities, union of waterboards) - Ministries in the National Water Consultation: Ministry of Transport, Public Works and Water Management, Ministry of Housing, Spatial Planning and the Environment and the Ministry of Agriculture, Nature and Food Quality - Delta Commissioner
An inter-agency programme	X		Research program Living with Water
A co-ordination group of experts	X		Expert groups under the National Water Consultation
An inter-ministerial mechanism for addressing territorial water concerns		X	Not inter-ministerial. One Ministry of Transport, Public Works and Water Management
Other (please specify)			
No specific co-ordination mechanism			

Institutional mapping of water policy roles and responsibilities at sub-national level: Allocation of roles across local and regional authorities

Allocation of roles and responsibilities in water policy design and implementation at territorial level

Actors at sub-national level	Areas Water resources (including agriculture and cooling water for the industry)	Water services		
		Water supply		Wastewater treatment
		Domestic	Agriculture	Industry
Municipalities	X (Municipal water management)			
Regions (provinces, states in federal countries, autonomous regions, cantons, etc.)	X (Translating national policy in regional policy)		n/a	
Inter-municipal bodies	n/a			
Water specific bodies (e.g. elected water boards, etc.)	X (Translating national policy in regional policy)		n/a	X
River basin organisations				
Other (specify)				

Allocation of roles and responsibilities in water regulation (rule production and enforcement)

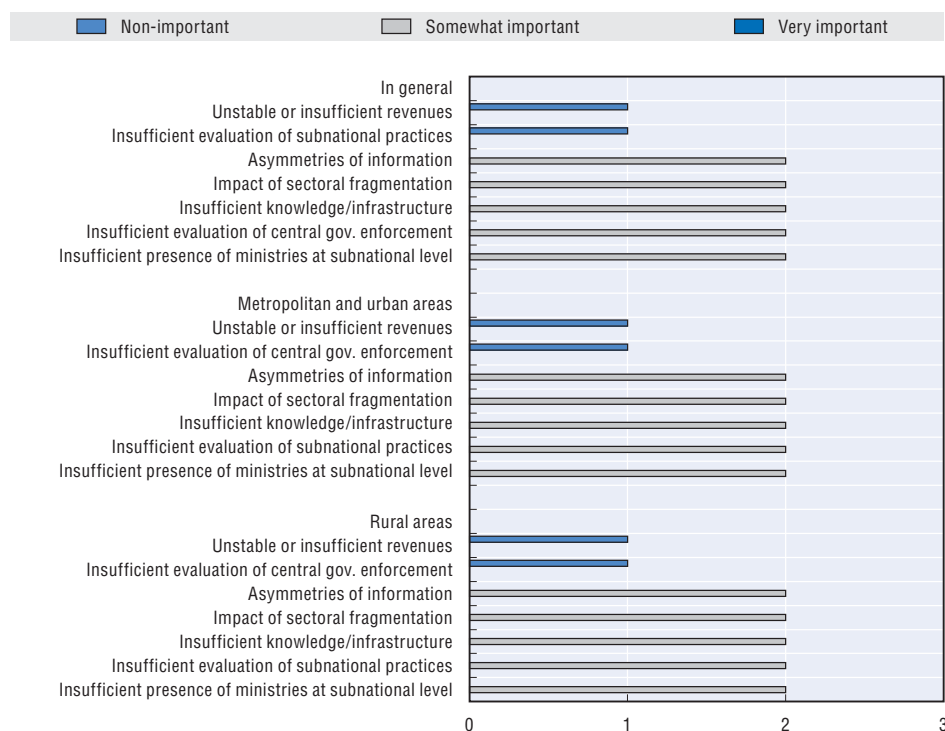
Roles	Areas	Water resources	Water services			
			Water supply		Wastewater treatment	
			Domestic	Agriculture		Industry
Allocation of uses		Water boards	Drinking Water Company	n/a	n/a	Water boards*
Quality standards		Water boards	Drinking Water Company	n/a	n/a	Water boards
Compliance of service delivery commitment		n/a	n/a	n/a	n/a	n/a
Economic regulation (tariffs, etc.)		n/a		n/a	n/a	n/a
Environmental regulation (enforcement of norms, etc.)		Water boards	Provinces: permits for ground water collection	n/a	n/a	Water boards
Control at sub-national level of national regulations' enforcement		Water boards		n/a	n/a	
Other (specify)						

Co-ordination of water policy making between levels of government and across local actors**Specific focus on selected mechanisms****River basin organisations**

Constituencies			
Type of actor or institution	Name		
Central government ministries or public agencies	No		
Local and regional authorities	No		
Private companies/actors	No		
Citizens and NGOs	No		
Other	Water Boards: elected representatives of citizens, together with representatives of industry, agriculture and organisations for management of natural resources		
Missions			
Functions	Yes	No	Details
Monitoring	X		Union of Water Boards in the Netherlands, <i>www.uvw.nl</i>
Co-ordination	X		
Regulation	X		
Data collection	X		
Pollution prevention	X		
Harmonisation of water policies at basin level	X		
Allocation of uses	X		
Planning	X		
Financing			
Infrastructure construction			
Other			
Monitoring			
Provinces, <i>www.ipo.nl</i> and the Inspectorate for Transport, Public Works and Water, <i>www.ivw.nl</i>			
Financing			
Type	Details		
Autonomous budget	<i>Taxes:</i> citizens, living in the area of the water board and agrarian, industry in the area of the water board		
Grants from central government	Yes		
Grants from sub-national governments	Yes		
Other	European Union		

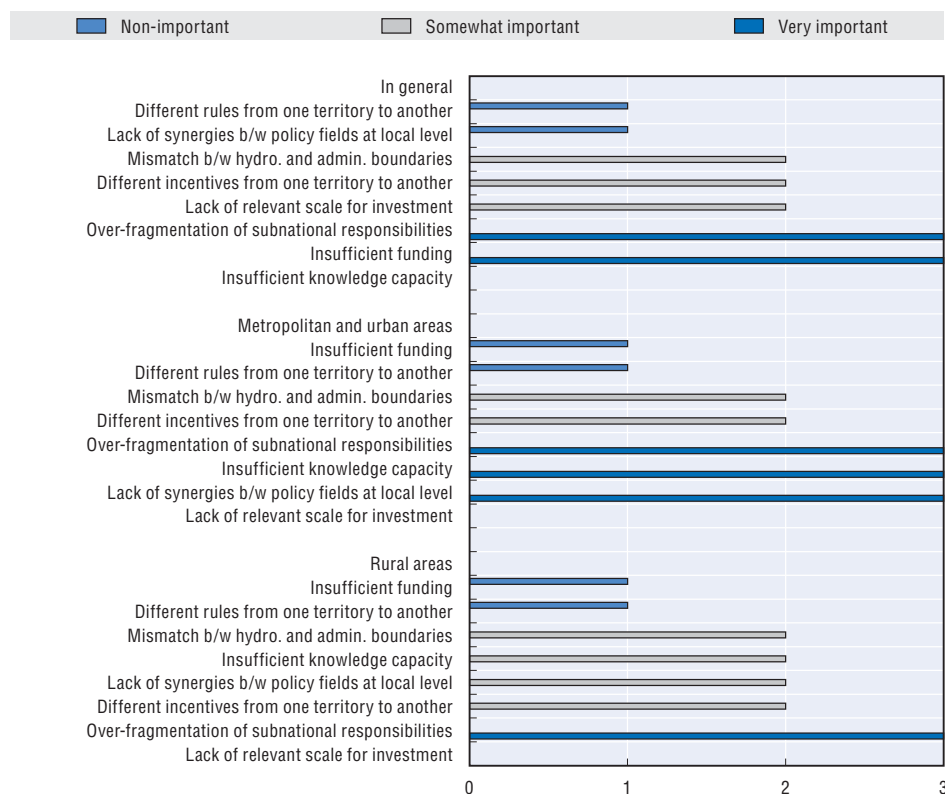
Obstacles to vertical co-ordination in water policy making

Netherlands – Obstacles for vertical co-ordination



Obstacles to capacity building and co-ordination at territorial level

Netherlands – Co-ordination and capacity challenges



Existing mechanisms for co-ordinating water policy between levels of government and at territorial level

Existing mechanism for vertical co-ordination and territorial effectiveness in water policy	Yes	No	n/a	Details (contact information, website, etc.)
River basin organisations/agencies		X		Program Room for the River (<i>Ruimte voor de Rivier</i>)
Regulations for sharing roles between actors	X			Waterwet
Co-ordination agency or commission	X			• National Water Consultation • Delta programme
Contractual arrangements (between central and local governments, central and regional governments, regional and local governments)	X			National Governance Agreement Water (<i>nationaal bestuursakkoord water</i>)
Intermediate bodies or actors (e.g. state territorial representatives)				Ministry of Water Management, regional representatives in Directorate-General for Public Works and Water Management
Financial transfers or incentives	X			From the central government to the water boards Deltafund (> 2020)
Performance indicators	X			DG Water
Shared databases	X			Informationhouse
Sectoral conferences between central and sub-national water players	X			
Multi-sectoral conferences	X			
Consultation of private stakeholders (profit and non-profit actors)	X			Consultation of stakeholders for the national water plan
Other (specify)				

Tools to manage the interface between actors at sub-national level

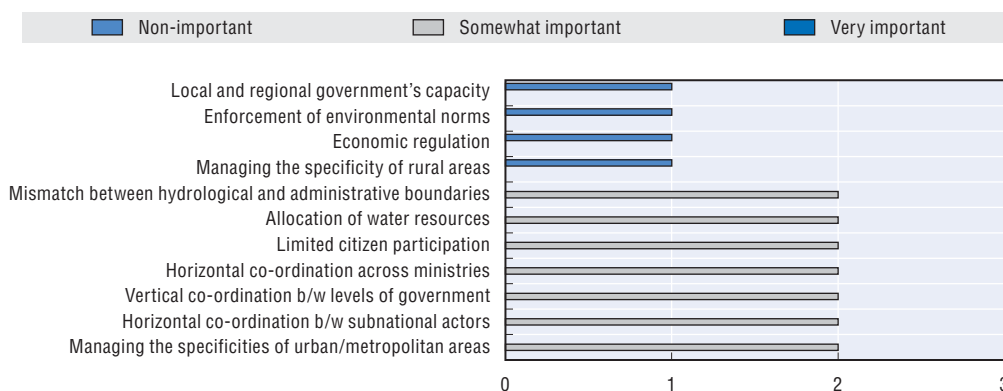
Existing mechanisms for co-ordination across different water actors at sub-national level	Yes	No	Details (name, example, contact information, website, capacity issues addressed, etc.)
Inter-municipal collaboration		X	
Inter-municipal specific body		X	
Specific incentives from central/regional government (in terms of rules, rewards and sanction mechanisms, budget allocation, etc.)		X	
Historical rules and traditions		X	
Specific mechanisms for conflict resolution		X	
Informal co-operation around projects	X		
Joint financing	X		
Metropolitan or regional water districts		X	
Other (specify)			

Tools for capacity building at sub-national level

Type of mechanism	Yes	No	n/a	Details (name, example, contact information, website, capacity issues addressed, etc.)
Broad governance mechanisms				
Collaboration with the private sector (know-how transfer, concession contracts, BOTs, etc.)	X			Water Governance Centre, Program Living with water
Financial incentives (specify from whom and for what)	X			Research programs to stimulate the development and implementation on new governance approaches, like the program Living with Water
Performance indicators and targets holding local governments accountable	X			Benchmarking Water boards
Citizens' participation	X			
Involvement of civil society organisations	X			
Databases (sharing information)	X			Starting to be implemented and to be effective
Historical arrangements (water courts, etc.)		X		
Other (specify)				
Management mechanisms				
Training – Workshops – Conferences	X			
Specific performance monitoring mechanism for staff (teams or individuals)		X		
Other (specify)				

Final assessment of remaining challenges

Netherlands – Main challenges in water policy making



NEW ZEALAND

Acronyms and abbreviations

Dbuilding	Department of Building and Housing
Dconservation	Department of Conservation
FSA	New Zealand Food Safety Authority
Magri	Ministry of Agriculture and Fisheries
Menviron	Ministry for the Environment
Mhealth	Ministry of Health
LWF	Land and water forum
PCE	Parliamentary Commission for the Environment
NZStats	Statistics New Zealand
WSP	Water service providers (usually local councils)
WWSP	Waste Water service providers (usually local councils)
Dinternal	Department of Internal Affairs
MED	Ministry of Economic Development

Institutional mapping of water policy roles and responsibilities at central government level: Allocation of roles across ministries and public agencies

Design and implementation of water policies

Roles	Areas	Water resources	Water services			
			Water supply			Wastewater treatment
			Domestic	Agriculture	Industry	
Strategy, priority setting, and planning (including infrastructure)		Ministry for the Environment and Ministry Agriculture and Forestry jointly lead policy programme (“New Start for Freshwater”) – involves a wider range of departments to set the priorities	- Water service providers (usually local councils) required to assess infrastructure requirements and priorities for funding under Local Government Act (for which the Department of Internal Affairs is the responsible central government agency) - Ministry of Health is responsible for the Health Act, which provides local government with policy for sanitary works	- Ministry Agriculture and Forestry (priority setting) - Ministry of Economic Development, the Treasury and Ministry Agriculture and Forestry also looking at national strategy for infrastructure requirements	- Most industrial water supplies either via urban (domestic) systems or self-supply - Those which self supply are generally subject to policy and regulations under the Resource Management Act (see “Water resources” column)	- Ministry of Economic Development, Treasury, Ministry Agriculture and Forestry, and Ministry of Health looking at national strategy for infrastructure requirements - Ministry for the Environment – The New Zealand Waste Strategy includes a target requiring all substandard wastewater treatment plants to be upgraded, closed or replaced by December 2020 - Wastewater service providers (usually local councils) required to assess infrastructure requirements and priorities funding under Local Government Act

Roles	Areas	Water resources	Water services			Wastewater treatment
	Water supply					
	Domestic		Agriculture	Industry		
Policy-making and implementation	- Ministry for the Environment and Ministry of Agriculture and Forestry jointly lead policy programme New Start for Freshwater – involves a wider range of departments to set the national policy - Ministry for the Environment is responsible for administering the legislation and process by which Water Conservation Orders are considered - Department of Building and Housing is responsible for the Building Act, which facilitates efficient use of water and water conservation in buildings	- Ministry of Health – The New Zealand Drinking-Water Standards ensure all New Zealanders have access to good quality drinking water - The standards apply to public and private supplies, but not bottled water. Under the Health Act (2007 amendment), drinking water suppliers must comply with the Drinking-Water Standards	Ministry Agriculture and Forestry, with responsibility devolved to territorial authorities and regional councils (supply and allocation)	- Most industrial water supplies either via urban (domestic) systems or self-supply - Those which self supply are generally subject to policy and regulations under the Resource Management Act (see “Water resources” column)	- Central government policy on wastewater is generally related to discharges to the environment and is managed under the Resource Management Act (see “Water resources” column) - Ministry of Health allocates funding to upgrade wastewater treatment plants under sanitary works subsidy scheme - MoH also runs the Drinking Water Assistance programme (which has been renewed) - This helps small, disadvantaged communities establish or improve drinking water supplies	
Information, monitoring and evaluation	- Ministry for the Environment – responsible for national-scale evaluation and reporting - Ministry for the Environment – also sets guidelines for monitoring	Ministry of Health – set guidelines for monitoring and report drinking water quality			Ministry for the Environment – wastewater monitoring is typically done by local government, however the Ministry for the Environment, in partnership with an NGO, support local government with monitoring guidelines and resources	

6. COUNTRY PROFILES

Roles	Areas	Water resources	Water services			Wastewater treatment
			Water supply			
			Domestic	Agriculture	Industry	
Stakeholders engagement (citizens’ awareness, etc.)		• The Land and Water Forum (a stakeholder-led process) is a collaborative process to provide recommendations to central government to assist it’s role as policy-maker, and consultation on specific proposals as they are developed	• Ministry for the Environment – stakeholder engagement on water services is typically managed at a local government rather than centralised level • Ministry for the Environment, in partnership with an NGO, support local government with guidelines and resources • Department of Internal Affairs administers the Local Government Act, which includes an obligation for local government organisations to provide water services			• Ministry for the Environment – stakeholder engagement on wastewater services is typically managed at a local government rather than centralised level • Ministry for the Environment, in partnership with an NGO, support local government with guidelines and resources
Other (specify)		• Parliamentary Commissioner for the Environment has an information review and monitoring role • Statistics New Zealand produces general statistics in relation to the environment • Department of Conservation – responsibilities for concessions and biodiversity monitoring				

Institutional mapping for quality standards and regulation

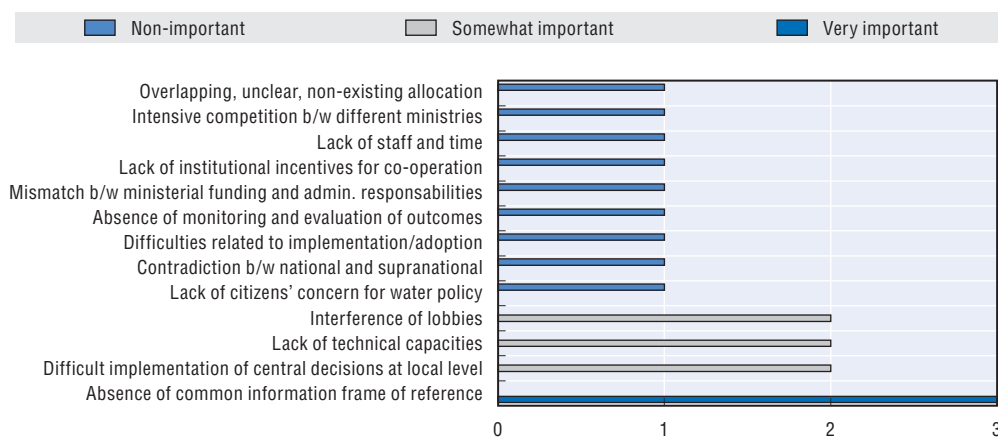
Roles	Areas	Water resources	Water services		
			Water supply		Wastewater treatment
			Domestic	Agriculture	Industry
Allocation of uses		Ministry for the Environment can use national tools (National Policy Statements and National Environmental Standards) to provide direction to regional councils with their devolved responsibilities relating to the allocation of water			
Quality standards		Ministry for the Environment can use national tools (National Policy Statements, National Environmental Standards and national water quality guidelines) to guide regional councils with their devolved responsibilities relating to the setting limits relating to water quality	- Ministry of Health – The New Zealand Drinking-Water Standards ensure all New Zealanders have access to good quality drinking water - The standards apply to public and private supplies, but not bottled water - Under the Health Act (2007 amendment), drinking water suppliers must comply with the Drinking-Water Standards - Ministry for the Environment – The National Environmental Standard for Sources of Human Drinking Water will reduce the risk of contaminating drinking water sources such as rivers and groundwater	Ministry for the Environment – The ANZECC water quality guidelines (not standards) include guidelines for stock water and irrigation uses	Ministry for the Environment, in partnership with an NGO – provide guidelines on application of biosolids to land (including quality)
Compliance of service delivery commitment		Ministry for the Environment – monitors the implementation of the RMA by local government, and reports on this	Department of Internal Affairs – monitors the implementation of the LGA by local government, and reports on this	Ministry for the Environment – monitors the implementation of the RMA by local government, and reports on this	Department of Internal Affairs – monitors the implementation of the LGA by local government, and reports on this

Roles	Areas	Water resources	Water services		
			Water supply		Wastewater treatment
			Domestic	Agriculture	Industry
Economic regulation (tariffs, etc.)		Ministry for the Environment – the RMA provides for the use of economic instruments, if local government chooses to use them – note government cannot charge – <i>i.e.</i> collect rents, etc.			
Environmental regulation (enforcement of norms, etc.)		- Ministry for the Environment is responsible for the RMA, which is the statute for regulatory water allocation and use but most rule-setting is devolved to local government - Also the statute which relates to water quality and environmental condition - Enforcement powers sit with local government			
Other (specify)		Department of Conservation – Responsible for Conservation and Natural Heritage			

Co-ordination of water policy making across ministries and public agencies at central government level

Obstacles to horizontal co-ordination in water policy making

New Zealand CG – Obstacles to co-ordination at central level



Existing mechanisms for co-ordinating the action across ministries and public agencies

Existing co-ordination mechanism across ministries/public agencies	Yes	No	Details (name, website, contact detail, description, examples, etc.)
A ministry of water		X	
A line ministry	X		Ministry for the Environment – lead agency on resource management (including water)
A central agency for water related issues			Ministry for the Environment is the lead agency
An <i>ad hoc</i> high level structure (National Council, etc.)			
An inter-ministerial body (committee, commission, etc.)			Economic Growth and Infrastructure Committee
An inter-agency programme	X		New Start for Fresh Water Policy Programme – jointly led by Ministry for the Environment and the Ministry of Agriculture and Forestry – involves a wide range of central government departments
A co-ordination group of experts			Land and Water Forum
An inter-ministerial mechanism for addressing territorial water concerns			Cabinet Committees of Ministers
Other (please specify)	X		Natural Resources Sector
No specific co-ordination mechanism			

Institutional mapping of water policy roles and responsibilities at sub-national level: Allocation of roles across local and regional authorities

Allocation of roles and responsibilities in water policy design and implementation at territorial level

Areas	Water resources	Water services			
		Water supply			Wastewater treatment
		Domestic	Agriculture	Industry	
Actors at sub-national level					
Municipalities		X	X	X	X
Regions (provinces, states in federal countries, autonomous regions, cantons, etc.)	X (Regional councils are based on the large catchments)	X (Bulk storage and supply, abstraction rates/volumes)	X (Abstraction rates/volumes)	X (Abstraction rates/volumes)	X (Discharges into environment)
Inter-municipal bodies	X (Auckland Council/Watercare)	X (Auckland Council/Watercare and Wellington/Capacity)	X	X	X (Auckland Council/Watercare and Wellington/Capacity)
Water specific bodies (e.g. elected water boards, etc.)					
River basin organisations					
Other (specify)					

Allocation of roles and responsibilities in water regulation (rule production and enforcement)

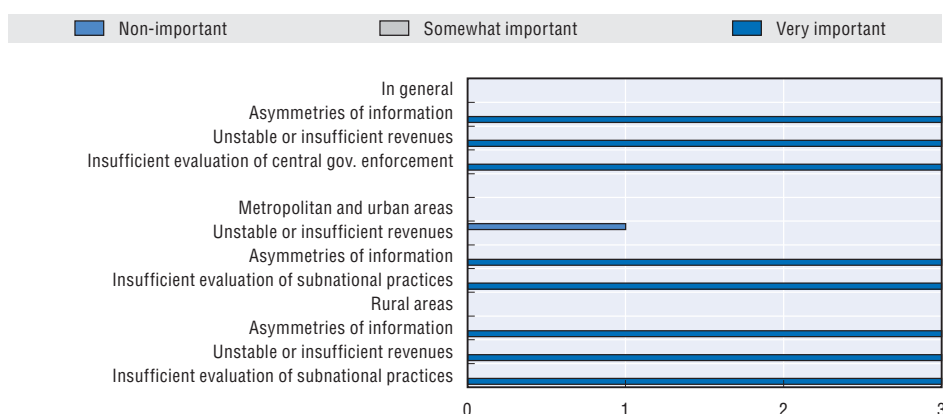
Roles	Areas	Water resources	Water services			Wastewater treatment
			Water supply			
			Domestic	Agriculture	Industry	
Allocation of uses	- Regional councils - under section 14 of the RMA the taking, using, damming and diverting of water from rivers, lakes and aquifers must either be authorised by consent or be a permitted activity in a regional plan - Regional plans are also able to specify allocation limits and water quality limits for individual waterbodies, and prioritise uses/efficiency requirements for the uses	- Regional councils issue resource consents for the abstraction of water for municipal systems - Territorial authorities (city and district councils) hold consents for the provision of the water to individual households/industry within the municipal supply area	Regional councils authorise the taking of water by agricultural uses	Regional councils authorise the taking of water by industry	- Regional councils – under the RMA are responsible for making decisions on the allocation and use of water within their boundaries - This includes decisions on resource consents for discharges into the environment (<i>e.g.</i> into fresh water or onto land) – including from agricultural activities and treated wastewater - Territorial authorities – usually hold the consents for discharges from waste water treatment plants into the environment	
Quality standards	Regional councils – set water quality for water bodies in their region				- Regional councils set water quality standards for individual water bodies in their region - This includes determining receiving water quality to be met by discharges - Territorial authorities are responsible for setting quality standards for discharges they received into their wastewater treatment plants	
Compliance of service delivery commitment					Discharges into reticulated sewage systems are the responsibility of the territorial authority, which authorises industrial discharges into the system	
Economic regulation (tariffs, etc.)	Regional councils – can use economic instruments amongst the range of measures that they choose to implement their water quality and quantity policies/limits	Territorial authorities determine whether to fund municipal water supply through targeted rates, metering or general rates		Territorial authorities determine charges for water supplied to industry from municipal supply networks	Territorial authorities are responsible for setting the charges for wastewater disposal into reticulates wastewater disposal systems, via trade waste charges	
Environmental regulation (enforcement of norms, etc.)	- Regional councils – rules in regional plans have the force of regulation - The regional councils are responsible for monitoring compliance with the rules, and using enforcement action where this does not occur	Regional councils – are responsible for ensuring compliance and enforcement of abstraction volume limits	Regional councils – are responsible for ensuring compliance and enforcement of abstraction volume limits	Regional councils – are responsible for ensuring compliance and enforcement of abstraction volume limits	- Territorial authorities are responsible for compliance and enforcement of discharges into their reticulated systems - Regional councils are responsible for enforcement of discharges from the wastewater treatment system	

Roles	Areas	Water resources	Water services		
			Water supply		Wastewater treatment
			Domestic	Agriculture	Industry
Control at sub-national level of national regulations' enforcement		- Regional councils must observe national environmental standards (8) - Every local authority and consent authority must enforce the observance of national environmental standards to the extent to which their powers enable them to do so			
Other (specify)					

Co-ordination of water policy making between levels of government and across local actors

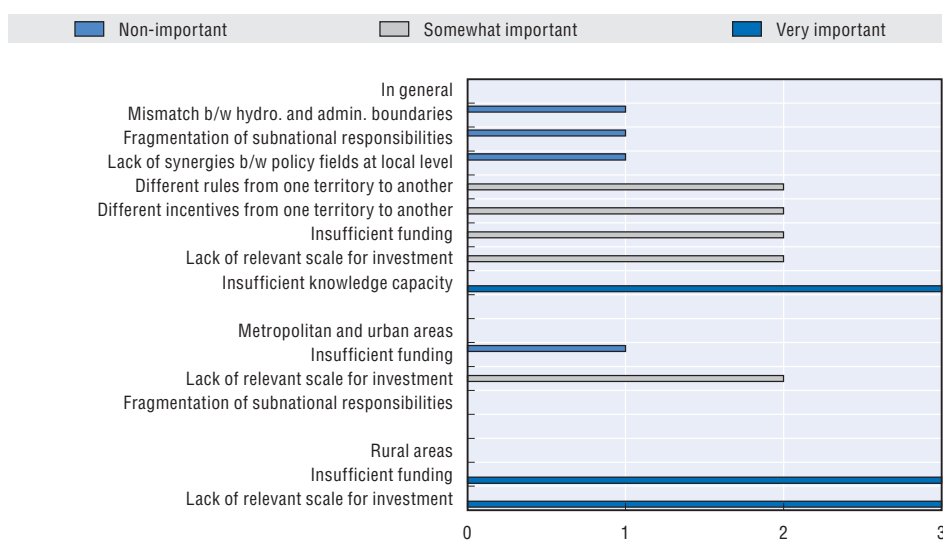
Obstacles to vertical co-ordination in water policy making

New Zealand CG – Obstacles for vertical co-ordination



Obstacles to capacity building and co-ordination at territorial level

New Zealand CG – Co-ordination and capacity challenges



Existing mechanisms for co-ordinating water policy between levels of government and at territorial level

Existing mechanism for vertical co-ordination and territorial effectiveness in water policy	Yes	No	n/a	Details (contact information, website, etc.)
River basin organisations/agencies			X	
Regulations for sharing roles between actors	X			The Resource Management Act 1991 specifies the various roles, and linkages/relationships between the roles
Co-ordination agency or commission	X			Ministry for the Environment – as the central government responsible for the Resource Management Act 1991
Contractual arrangements (between central and local governments, central and regional governments, regional and local governments)		X		
Intermediate bodies or actors (e.g. state territorial representatives)		X		
Financial transfers or incentives		X		
Performance indicators	X			State of the environment indicators
Shared databases				
Sectoral conferences between central and sub-national water players				Land and Water Forum
Multi-sectoral conferences				• Water New Zealand • Hydrological Society of New Zealand • New Zealand Planning Institute
Consultation of private stakeholders (profit and non-profit actors)	X			The RMA has formal mandatory public consultation processes which involve water users (such as hydro-electricity interests, irrigation interests, recreational interests and environmental organisations) in the formal statutorily defined process for developing the regional councils' policy and planning documents
Other (specify)				

Specific focus on selected mechanisms**Tools to manage the interface between actors at sub-national level**

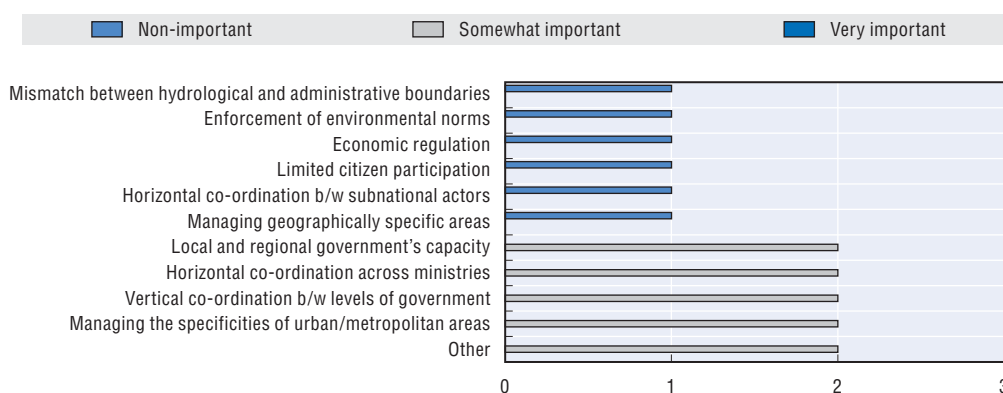
Existing mechanisms for co-ordination across different water actors at sub-national level	Yes	No	Details (name, example, contact information, website, capacity issues addressed, etc.)
Inter-municipal collaboration	X		Resource Managers Group
Inter-municipal specific body	X		Local Government New Zealand
Specific incentives from central/regional government (in terms of rules, rewards and sanction mechanisms, budget allocation, etc.)			
Historical rules and traditions	X		Case law – set by a dedicated Environment Court with specialist knowledge relating to the Resource Management Act
Specific mechanisms for conflict resolution			
Informal co-operation around projects			
Joint financing			
Metropolitan or regional water districts	X		
Other (specify)			

Tools for capacity building at sub-national level

Type of mechanism	Yes	No	n/a	Details (name, example, contact information, website, capacity issues addressed, etc.)
Broad governance mechanisms				
Collaboration with the private sector (know-how transfer, concession contracts, BOTs, etc.)				
Financial incentives (specify from whom and for what)				
Performance indicators and targets holding local governments accountable	X			
Citizens' participation				
Involvement of civil society organisations				
Databases (sharing information)	X			
Historical arrangements (water courts, etc.)				
Other (specify)				
Management mechanisms				
Training – Workshops – Conferences	X			
Specific performance monitoring mechanism for staff (teams or individuals)				
Other (specify)				

Final assessment of remaining challenges

New Zealand CG – Main challenges in water policy making



PORTUGAL

Acronyms and abbreviations

CNA	National Water Council
APDA	Portuguese association of water distributors
APRH	Portuguese association of water resources
ARH	Hydrographic Region Administrations
CAN	National water councils
CRH	Regional Water Councils
ERSAR	Regulatory agency of water and wastewater services
INAG	Water Institute
IGAOT	Inspectorate General of Environment and Spatial Planning
MAOT	Ministry of Environment and Spatial Planning
MADRP	Ministry of Agriculture, Rural Development and fishing
MEI	Ministry of Economy and Innovation

Institutional mapping of water policy roles and responsibilities at central government level: Allocation of roles across ministries and public agencies

Design and implementation of water policies

Roles	Areas	Water resources	Water services			
			Water supply			Wastewater treatment
			Domestic	Agriculture	Industry	
Strategy, priority setting, and planning (including infrastructure)		Ministry of Environment and Spatial Planning (MAOT)	• Ministry of Environment and Spatial Planning (MAOT)	MAOT MADRP	MAOT MEI	Ministry of Environment and Spatial Planning (MAOT)
Policy-making and implementation		Ministry of Environment and Spatial Planning (MAOT)	• Ministry of Environment and Spatial Planning (MAOT)	MAOT MADRP	MAOT MEI	MAOT
Information, monitoring and evaluation		Water Institute (INAG)	• Regulatory agency of water and wastewater services (ERSAR)	INAG	INAG	Regulatory agency of water and wastewater services (ERSAR)
Stakeholders engagement (citizens' awareness, etc.)		National Water Council (CNA)	• APDA – Portuguese association of water distributors • APRH – Portuguese association of water resources, ERSAR's advisory board, CNA		CNA	
Other (specify)						

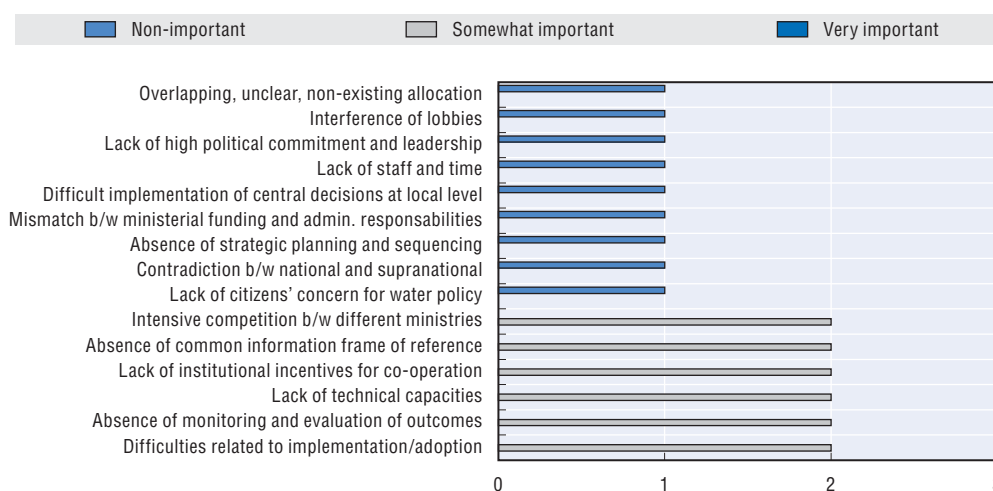
Institutional mapping for quality standards and regulation

Roles	Areas	Water resources	Water services		
			Water supply		
			Domestic	Agriculture	Industry
Allocation of uses		MAOT, Hydrographic Region Administrations (ARH)	ARH	ARH	ARH
Quality standards		Hydrographic Region Administrations (ARH)	ERSAR	MAOT MADRP	MAOT MEI
Compliance of service delivery commitment			MAOT ERSAR	MAOT MADRO	MAOT MEI
Economic regulation (tariffs, etc.)		Hydrographic Region Administrations (ARH), INAG, CRH	MAOT ERSAR		
Environmental regulation (enforcement of norms, etc.)		Hydrographic Region Administrations (ARH), IGAOT	ARH	ARH	
Other (specify)		INAG			
					Hydrographic Region Administrations (ARH)
					MAOT ERSAR
					MAOT ERSAR
					ARH IGAOT

Co-ordination of water policy making across ministries and public agencies at central government level

Obstacles to horizontal co-ordination in water policy making

Portugal – Obstacles to co-ordination at central level



Existing mechanisms for co-ordinating the action across ministries and public agencies

Existing co-ordination mechanism across ministries/public agencies	Yes	No	Details (name, website, contact detail, description, examples, etc.)
A ministry of water		X	
A line ministry	X		MAOT
A central agency for water related issues			INAG
An <i>ad hoc</i> high level structure (National Council, etc.)	X		National Water Council, consulting body of the Minister MAOT
An inter-ministerial body (committee, commission, etc.)		X	
An inter-agency programme		X	
A co-ordination group of experts		X	
An inter-ministerial mechanism for addressing territorial water concerns		X	
Other (please specify)			
No specific co-ordination mechanism			

Institutional mapping of water policy roles and responsibilities at sub-national level: Allocation of roles across local and regional authorities

Allocation of roles and responsibilities in water policy design and implementation at territorial level

Areas	Water resources	Water services			
		Water supply			Wastewater treatment
		Domestic	Agriculture	Industry	
Actors at sub-national level					
Municipalities		X		X	Municipalities, Water companies
Regions (provinces, states in federal countries, autonomous regions, cantons, etc.)	- Regional Government of autonomous region of Azores - Regional government of autonomous region of Madeira	- Regional Government of autonomous region of Azores - Regional government of autonomous region of Madeira	- Regional Government of autonomous region of Azores - Regional government of autonomous region of Madeira	- Regional Government of autonomous region of Azores - Regional government of autonomous region of Madeira	- Regional Government of autonomous region of Azores - Regional government of autonomous region of Madeira
Inter-municipal bodies		- Multi-municipal systems (state and municipalities partnerships) - Intermunicipal companies and associations			Multimunicipal systems (state and municipalities partnerships)
Water specific bodies (e.g. elected water boards, etc.)	CRH, Hydrographic Region Councils	CRH, Hydrographic Region Councils	CRH, Hydrographic Region Councils	CRH, Hydrographic Region Councils	CRH, Hydrographic Region Councils
River basin organisations	Five Hydrographic Region Administrations (ARH)				
Other (specify)		Water private companies (concessions granted by municipalities)	Autonomous water sources	Autonomous water sources	Water private companies (concessions given by municipalities)

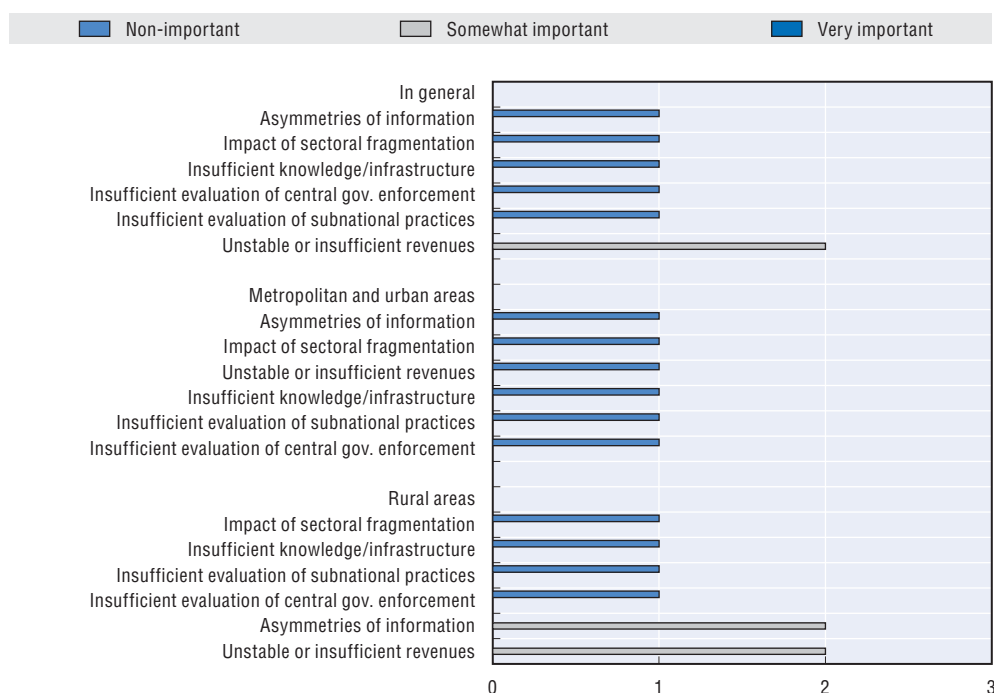
Allocation of roles and responsibilities in water regulation (rule production and enforcement)

Areas	Water resources	Water services			
		Water supply			Wastewater treatment
		Domestic	Agriculture	Industry	
Roles					
Allocation of uses	Hydrographic Region Administrations (ARH)	ARH	ARH	ARH	Hydrographic Region Administrations (ARH)
Quality standards	Hydrographic Region Administrations (ARH)	ERSAR	MAOT MADRP	MAOT MEI	Hydrographic Region Administrations, ERSAR
Compliance of service delivery commitment		Municipalities ERSAR	MAOT MARP	MAOT MEI	Municipalities ERSAR
Economic regulation (tariffs, etc.)	Hydrographic Region Administrations (ARH)	Municipalities ERSAR	MAOT MARP	MAOT MEI	Municipalities ERSAR
Environmental regulation (enforcement of norms, etc.)	Hydrographic Region Administrations (ARH) IGAOT				Hydrographic Region Administrations (ARH) IGAOT
Control at sub-national level of national regulations' enforcement	Hydrographic Region Administrations (ARH)	ERSAR	MAOT MARP	MAOT MEI	ERSAR ARH
Other (specify)					

Co-ordination of water policy making between levels of government and across local actors

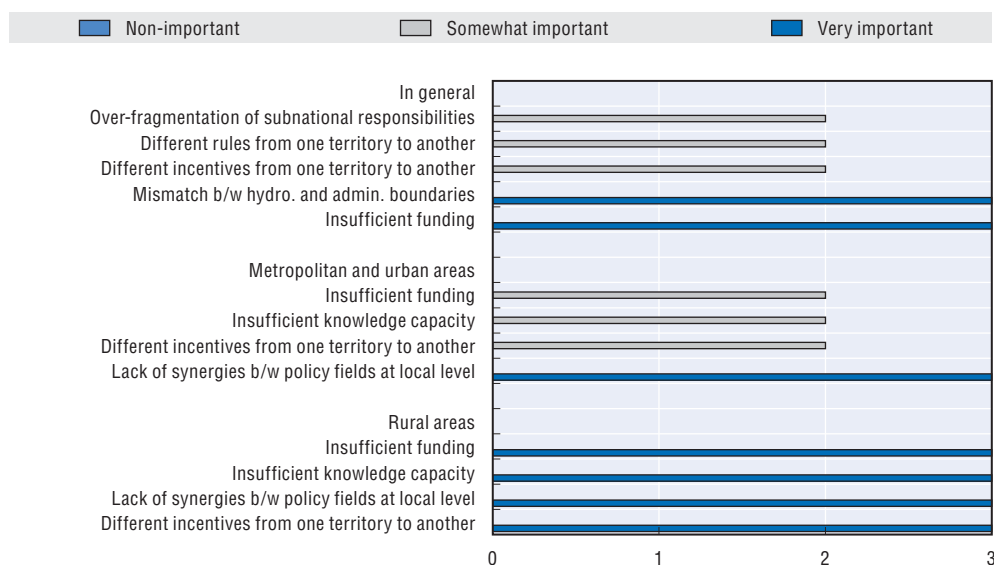
Obstacles to vertical co-ordination in water policy making

Portugal – Obstacles for vertical co-ordination



Obstacles to capacity building and co-ordination at territorial level

Portugal – Co-ordination and capacity challenges



Existing mechanisms for co-ordinating water policy between levels of government and at territorial level

Existing mechanism for vertical co-ordination and territorial effectiveness in water policy	Yes	No	Details (contact information, website, etc.)
River basin organisations/agencies	X		• Administração da Região Hidrográfica do Norte, I.P., www.arhnorte.pt • Administração da Região Hidrográfica do Centro, I.P., www.arhcentro.pt • Administração da Região Hidrográfica do Tejo, I.P., www.arhtejo.pt • Administração da Região Hidrográfica do Alentejo, I.P., www.arhalentejo.pt • Administração da Região Hidrográfica do Algarve, I.P., www.arhalgarve.pt
Regulations for sharing roles between actors		X	
Co-ordination agency or commission		X	
Contractual arrangements (between central and local governments, central and regional governments, regional and local governments)		X	
Intermediate bodies or actors (<i>e.g.</i> state territorial representatives)		X	
Financial transfers or incentives	X		
Performance indicators		X	
Shared databases	X		
Sectoral conferences between central and sub-national water players	X		
Multi-sectoral conferences	X		
Consultation of private stakeholders (profit and non-profit actors)	X		
Other (specify)			

Specific focus on selected mechanisms

River basin organisations

Constituencies		
Type of actor or institution	Name	
Central government ministries or public agencies	Yes	
Local and regional authorities	Yes	
Private companies/actors	No	
Citizens and NGOs	No	
Other		
Missions		
Functions	Yes	No Details
Monitoring	X	ARH Norte, I.P., www.arhnorte.pt ARH Centro, I.P., www.arhcentro.pt ARH Tejo, I.P., www.arhtejo.pt ARH Alentejo, I.P., www.arhalentejo.pt ARH Algarve, I.P., www.arhalgarve.pt
Co-ordination	X	
Regulation	X	
Data collection	X	
Pollution prevention	X	
Harmonisation of water policies at basin level	X	
Allocation of uses	X	
Planning	X	
Financing	X	
Infrastructure construction	X	
Other		
Monitoring		
Financing		
Type	Details	
Autonomous budget	Yes	
Grants from central government	Yes	
Grants from sub-national governments		
Other	• “The water resources tax is distributed between INAG (10%), ARH (40%) and the Water Resources Protection Fund (60%), which will finance water resources related projects and investments” • The Decree Law 97/2008, 11 June, establishes the economic and financial regime aiming at improving the efficiency and sustainability of water use • The economic and financial framework is supported by three instruments: water resources tax, water services tariffs and technical and/or economic protocols • The rationale behind the development of the framework includes the polluter pay and user pay principles, providing for the cost recovery of water services, the internalisation of costs associated with damage to the water status, including environmental and resource costs, and the adequate contribution of the different water uses • The water resources tax results from the sum of five components, each of one referring to a specific water use: water abstraction on Estate Public Domain, waste water discharges on Estate Public Domain, dredging on Estate Public Domain, occupation on Estate Public Domain and, the use of waters subject to public management and planning • Under each component, different values were set regarding the different users • In addition, and in order to take into due account some relevant aspects such as scarcity and/or economic and social issues, the regulation defines three coefficients of water scarcity and several reductions or exemptions	

Tools to manage the interface between actors at sub-national level

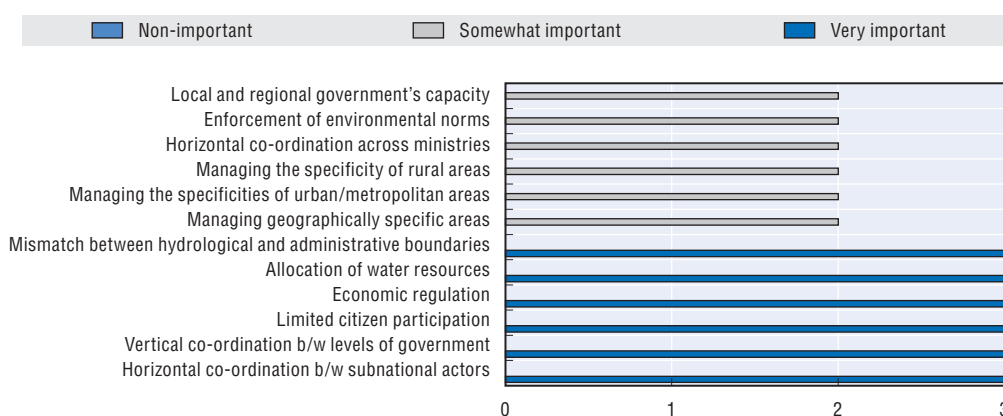
Existing mechanisms for co-ordination across different water actors at sub-national level	Yes	No	Details (name, example, contact information, website, capacity issues addressed, etc.)
Inter-municipal collaboration		X	
Inter-municipal specific body	X		Municipalities Associations (Associações de Municípios), www.anmp.pt/index.php?option=com_content&view=article&id=116&Itemid=118
Specific incentives from central/regional government (in terms of rules, rewards and sanction mechanisms, budget allocation, etc.)			
Historical rules and traditions		X	
Specific mechanisms for conflict resolution		X	
Informal co-operation around projects		X	
Joint financing	X		• National Strategic Reference Framework (NSRF), www.qren.pt/index.php?lang=1 • Seventh Framework Programme (FP7), http://cordis.europa.eu/fp7/dc/index.cfm
Metropolitan or regional water districts	X		River basin organisations: • Administração da Região Hidrográfica do Norte, I.P., www.arhnorte.pt • Administração da Região Hidrográfica do Centro, I.P., www.arhcentro.pt • Administração da Região Hidrográfica do Tejo, I.P., www.arhtejo.pt • Administração da Região Hidrográfica do Alentejo, I.P., www.arhalentejo.pt • Administração da Região Hidrográfica do Algarve, I.P., www.arhalgarve.pt Autonomous Regions (Azores constitutes a unique river basin district and Madeira another one; the river basin management and planning is a competences of the Regional Government, through the following entities): • Governo Regional dos Açores – Secretaria Regional do Ambiente e do Mar, www.azores.gov.pt/Portal/pt/entidades/sram/?lang=pt • Governo Regional da Madeira – Secretaria Regional do Ambiente e Recursos Naturais, www.sra.pt
Other (specify)			

Tools for capacity building at sub-national level

Type of mechanism	Yes	No	n/a	Details (name, example, contact information, website, capacity issues addressed, etc.)
Broad governance mechanisms				
Collaboration with the private sector (know-how transfer, concession contracts, BOTs, etc.)	X			Subcontracting and partnerships for projects development
Financial incentives (specify from whom and for what)	X			- National Strategic Reference Framework (NSRF), www.qren.pt/index.php?lang=1 - Seventh Framework Programme (FP7), http://cordis.europa.eu/fp7/dc/index.cfm
Performance indicators and targets holding local governments accountable	X			QUAR (Responsibility and Assessment Framework)
Citizens' participation	X			Public information and consultation in management and planning issues, www.arhnorte.pt/?co=248&tp=7&cop=336&LG=0&mop=337&it=pagina
Involvement of civil society organisations	X			Regional Water Councils (one for each Hydrographic Region Administration), www.arhnorte.pt/?co=289&tp=7&cop=285&LG=0&mop=290&it=pagina
Databases (sharing information)	X			Geographic Information Systems, http://snirh.pt
Historical arrangements (water courts, etc.)		X		
Other (specify)				
Management mechanisms				
Training – Workshops – Conferences	X			
Specific performance monitoring mechanism for staff (teams or individuals)	X			SIADAP (Integrated System for Management and Assessment of Performance in Public Administration)
Other (specify)				

Final assessment of remaining challenges

Portugal – Main challenges in water policy making



SPAIN

Acronyms and abbreviations

AL	<i>Administraciones Locales</i> (Local Administrations)
AYU	<i>Ayuntamientos</i> (Municipalities)
CA	<i>Comunidades Autonomas</i> (Autonomous Communities)
CADC	<i>Comité de co-ordination y co-operacion con Portugal en materia de aguas</i> (Co-ordination and co-operation committee with Portugal on Water)
CCHH	<i>Confederación Hydrográfica</i> (River Basin Authority)
DR	<i>Departamentos Regionales</i> (Regional Departments (ministries of the Autonomous Communities))
EU	European Union
MAEC	<i>Ministerio de Asuntos Exteriores y Co-operacion, Relaciones internacionales</i> (Ministry of Foreign Affairs, Co-operation and International relations)
MARM	<i>Ministerio de Medio Ambiente y Medio Rural y Marino</i> (Ministry of Environment, Rural and Marine Affairs)
MINT	<i>Ministerio del Interior</i> (Ministry of the Interior)
MITC	<i>Ministerio de Industria, Turismo y Comercio</i> (Ministry of Industry, Tourism and Trade)
MSPS	<i>Ministerio de Sanidad y Política Social</i> (Ministry of Health and Social Policy)
OC	<i>Organismos de Cuenca</i> (River basin organisation)

Institutional mapping of water policy roles and responsibilities at central government level: Allocation of roles across ministries and public agencies

Design and implementation of water policies

Roles	Areas	Water resources	Water services			
			Water supply			Wastewater treatment
			Domestic	Agriculture	Industry	
Strategy, priority setting, and planning (including infrastructure)		MARM CCHH MINT	MARM CCHH	MARM CCHH	MARM CCHH MITC	MARM
Policy-making and implementation		MARM CCHH MINT	MARM MSPS	MARM	MARM MITC	MARM
Information, monitoring and evaluation		MARM CCHH	MARM CCHH MSPS	MARM CCHH	MARM CCHH MITC	MARM
Stakeholders engagement (citizens' awareness, etc.)		MARM CCHH	MARM CCHH MSPS	MARM CCHH	MARM CCHH	MARM CCHH
Other (specify)						

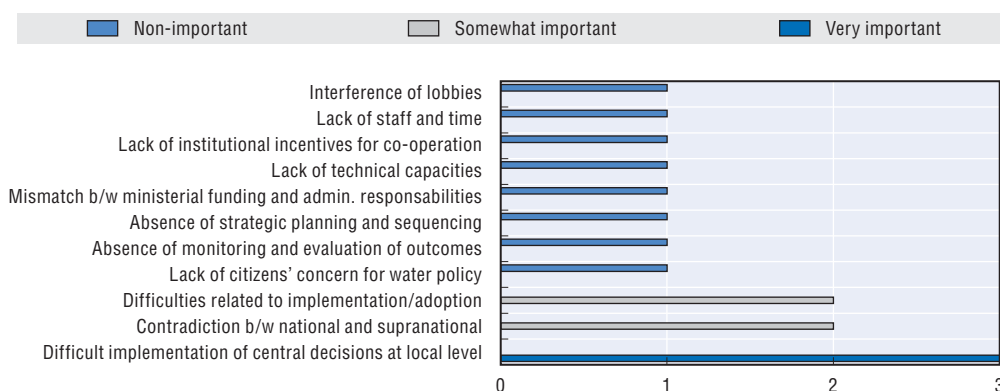
Institutional mapping for quality standards and regulation

Roles	Areas	Water resources	Water services			Wastewater treatment
			Water supply			
			Domestic	Agriculture	Industry	
Allocation of uses		MARM MITC CCHH	MARM CCHH	MARM CCHH	MARM CCHH	
Quality standards		MARM CCHH	MARM MSPS CCHH	MARM CCHH	MARM CCHH	
Compliance of service delivery commitment		MARM	MARM	MARM	MARM	
Economic regulation (tariffs, etc.)		MARM CCHH	MARM CCHH	MARM CCHH	MARM CCHH	
Environmental regulation (enforcement of norms, etc.)		MARM CCHH MSPS	MARM CCHH	MARM CCHH	MARM CCHH	
Other (specify)		MAEC CADC				

Co-ordination of water policy making across ministries and public agencies at central government level

Obstacles to horizontal co-ordination in water policy making

Spain – Obstacles to co-ordination at central level



Existing mechanisms for co-ordinating the action across ministries and public agencies

Existing co-ordination mechanism across ministries/public agencies	Yes	No	Details (name, website, contact detail, description, examples, etc.)
A ministry of water	X		MARM, www.marm.es
A line ministry		X	
A central agency for water related issues		X	
An <i>ad hoc</i> high level structure (National Council, etc.)	X		National Water Council
An inter-ministerial body (committee, commission, etc.)		X	
An inter-agency programme		X	
A co-ordination group of experts		X	
An inter-ministerial mechanism for addressing territorial water concerns		X	
Other (specify)	X		Groups of experts and interministerial mechanisms promoted by the MARM
No specific co-ordination mechanism			

Institutional mapping of water policy roles and responsibilities at sub-national level: Allocation of roles across local and regional authorities**Allocation of roles and responsibilities in water policy design and implementation at territorial level**

Actors at sub-national level	Water resources	Water services			
		Water supply			Wastewater treatment
		Domestic	Agriculture	Industry	
Municipalities		X		X	X
Regions (provinces, states in federal countries, autonomous regions, cantons, etc.)	X	X	X	X	X
Inter-municipal bodies	n/a	X	X		X
Water specific bodies (e.g. elected water boards, etc.)	n/a	n/a	n/a	n/a	n/a
River basin organisations	X	X	X	X	X
Other (specify)			X		

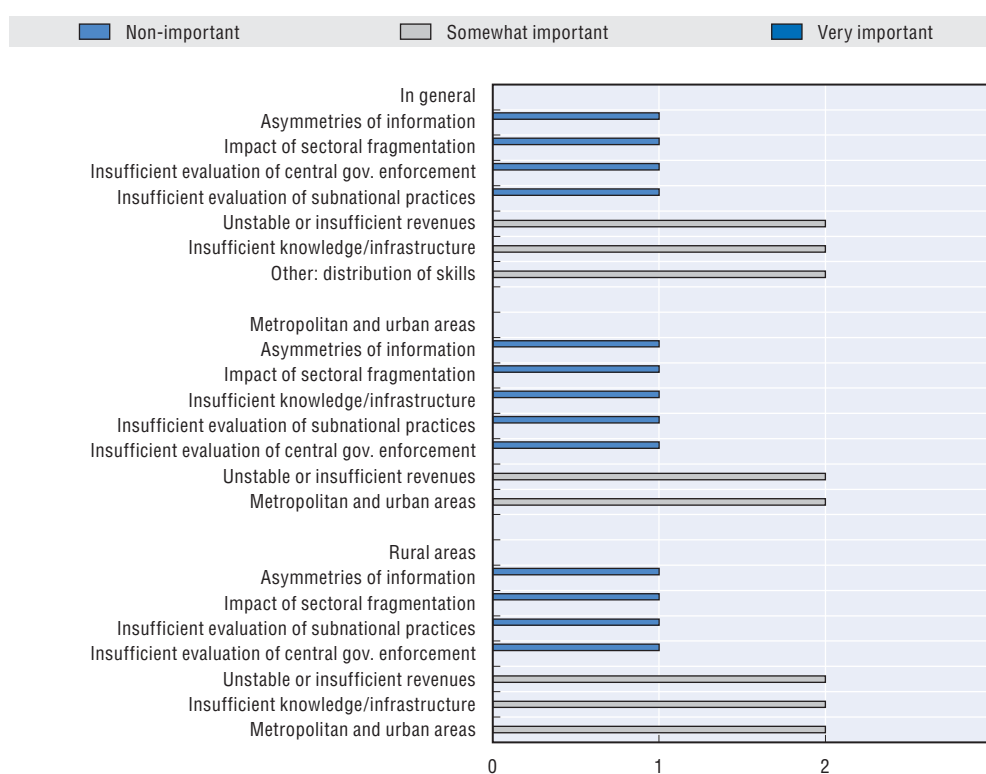
Allocation of roles and responsibilities in water regulation (rule production and enforcement)

Roles	Areas	Water resources	Water services		
			Water supply		
			Domestic	Agriculture	Industry
Allocation of uses		Regions CCHH	Regions CCHH	Regions CCHH	Regions CCHH
Quality standards		In general they are set-up by the central government, but can be complemented by regions and municipalities			
Compliance of service delivery commitment		Regions CCHH	Regions Municipalities	Regions Municipalities	Regions Municipalities
Economic regulation (tariffs, etc.)		Regions CCHH	Regions Municipalities CCHH	Regions CCHH	Regions Municipalities CCHH
Environmental regulation (enforcement of norms, etc.)		Regions CCHH	Regions CCHH	Regions CCHH	Regions CCHH
Control at sub-national level of national regulations' enforcement		Regions CCHH	Regions CCHH	Regions CCHH	Regions CCHH
Other (specify)					

Co-ordination of water policy making between levels of government and across local actors

Obstacles to vertical co-ordination in water policy making

Spain – Obstacles for vertical co-ordination



Obstacles to capacity building and co-ordination at territorial level

Not informed.

Specific focus on selected mechanisms**River basin organisations**

Constituencies			
Type of actor or institution	Name		
Central government ministries or public agencies	MARM for cross-region basins		
Local and regional authorities	River basin authorities (CCHH)		
Private companies/actors	No		
Citizens and NGOs	Decisions of river basin authorities are made public		
Other			
Missions			
Functions	Yes	No	Details
Monitoring	X		• River basin authorities (CCHH) are autonomous organisations with the following functions (amongst others) • Design, monitoring and revision of river basin plans • Administration and control of the public hydraulic domain • Design, operation and maintenance of infrastructure financed by CCHH or transferred by the central government
Co-ordination	X		
Regulation	X		
Data collection	X		
Pollution prevention	X		
Harmonisation of water policies at basin level	X		
Allocation of uses	X		
Planning	X		
Financing	X		
Infrastructure construction	X		
Other			
Monitoring			
CCHH are accountable to MARN (deconcentrated agencies from the central ministry)			
Financing			
Type	Details		
Autonomous budget	They have their own budget, which is aggregated in the federal budget		
Grants from central government	Transfers from the central government are of different types according to river basin authorities' characteristics, meteorological features. They can vary from 50 to EUR 200 million a year		
Grants from sub-national governments			
Other	They also have their own revenues through the collection taxes, fees and patrimonial revenues		

Existing mechanisms for co-ordinating water policy between levels of government and at territorial level

Existing mechanism for vertical co-ordination and territorial effectiveness in water policy	Yes	No	Details (contact information, website, etc.)
River basin organisations/agencies	X		
Regulations for sharing roles between actors	X		
Co-ordination agency or commission		X	
Contractual arrangements (between central and local governments, central and regional governments, regional and local governments)	X		
Intermediate bodies or actors (<i>e.g.</i> state territorial representatives)	X		
Financial transfers or incentives	X		
Performance indicators	X		
Shared databases	X		
Sectoral conferences between central and sub-national water players	X		Sectoral Conference on Environment
Multi-sectoral conferences	X		National Water Council
Consultation of private stakeholders (profit and non-profit actors)	X		
Other (specify)			

Tools to manage the interface between actors at sub-national level

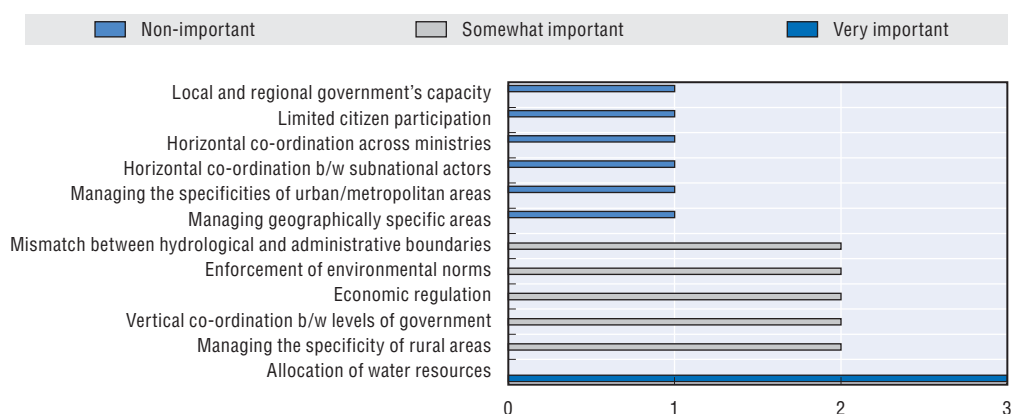
Mechanisms for vertical co-ordination across levels of government	Yes	No	Details (name, website, contact detail, description, examples, etc.)
Intermunicipal co-operation	X		Assemblies of users of water and sanitation services across municipalities
Intermunicipal bodies	X		
Specific incentives from the central government (regulations, premiums, sanctions, allocation of budget, etc.)	X		Allocation of budget, financing of infrastructure of general interest, etc.
Ancestral/historical rules	X		Water courts
Specific mechanisms for conflict resolution	X		Water "Agreements" of Aragón and Andalucía
Informal co-operation around projects	X		
Joint financing	X		<i>E.g.</i> River basin management plans jointly designed and financed between the central government and local authorities
Regional or metropolitan water districts	X		
Others (specify)			

Tools for capacity building at sub-national level

Type of mechanism	Yes	No	Details (name, website, contact detail, description, examples, etc.)
Broad governance mechanism			
Collaboration with the private sector (know-how transfer, concession contracts, BOTs, etc.)	X		Mainly in the sanitation sector
Financial incentives (specify from whom and for what)	X		In low populated areas, rural territories through territorial development plans
Performance indicators and targets holding local governments accountable		X	
Citizens' participation	X		
Involvement of civil society organisations	X		Not systematic
Databases (sharing information)		X	
Historical arrangements (water courts, etc.)	X		
Other (specify)			
Mecanismos de gestion			
Training – Workshops – Conferences	X		
Specific performance monitoring mechanism for staff (teams or individuals)	X		
Other (specify)			

Final assessment of remaining challenges

Spain CG – Main challenges in water policy making



UNITED KINGDOM (ENGLAND AND WALES)

Acronyms and abbreviations

AL	<i>Administraciones Locales</i>
CBI	Confederation of British Industries
CCW	Consumer Council for Water
DWI	Drinking Water Inspectorate
EA	Environment Agency
Govt	Government, <i>i.e.</i> Defra (Department for Food and Rural Affaires) and Welsh Assembly Government (these 2 always appear together)
NACCW	Natural England and the Countryside Council for Wales
NFU	National Farmers Union
OFWAT	Office for Water
RBM	Local stakeholder engagement through River Basin Management, as part of Water Framework Directive
UKIA	UK Irrigation Association
WAG	Welsh Assembly Government

**Institutional mapping of water policy roles and responsibilities at central government level:
Allocation of roles across ministries and public agencies
Design and implementation of water policies**

Roles	Areas	Water resources	Water services			
			Water supply			Wastewater treatment
			Domestic	Agriculture	Industry	
Strategy, priority setting, and planning (including infrastructure)		• Government (Defra/Welsh Assembly Government) • Environment Agency	• Government • Environment Agency, Ofwat and the Drinking Water Inspectorate • Water companies	• Government • Environment Agency	• Government • Environment Agency	• Government • Environment Agency and Ofwat • Water companies
Policy-making and implementation		• Government (Defra/Welsh Assembly Government) • Environment Agency	• Government • Environment Agency, Ofwat and the Drinking Water Inspectorate • Water companies	• Government (Defra/ Welsh Assembly Government) • Environment Agency	• Government (Defra/Welsh Assembly Government) • Environment Agency	• Government (Defra/Welsh Assembly Government) • Environment Agency
Information, monitoring and evaluation		• Government (Defra/Welsh Assembly Government) • Environment Agency	• Government (Defra/Welsh Assembly Government) • Environment Agency	• Government (Defra/ Welsh Assembly Government) • Environment Agency	• Government (Defra/Welsh Assembly Government) • Environment Agency	• Government (Defra/Welsh Assembly Government) • Environment Agency
Stakeholders engagement (citizens' awareness, etc.)		• Local stakeholder engagement through River Basin Management, as part of the Water Framework Directive	• Consumer Council for Water	• National Farmers Union – UK Irrigation Association	• Confederation of British Industries	• Consumer Council for Water
Other (specify)		• Environmental interests represented through Natural England and the Countryside Council for Wales				

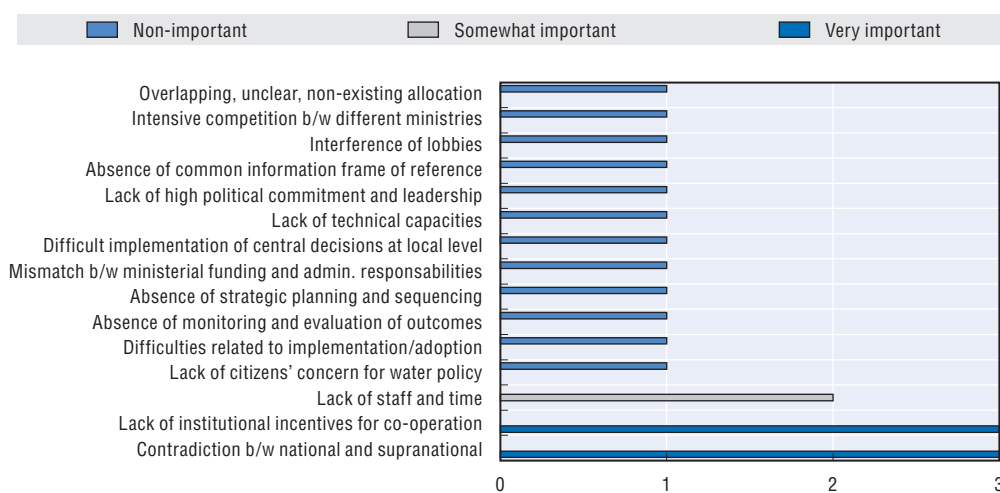
Institutional mapping for quality standards and regulation

Roles	Areas	Water resources	Water services			
			Water supply			Wastewater treatment
			Domestic	Agriculture	Industry	
Allocation of uses		Environment Agency	Environment Agency	Environment Agency	Environment Agency	Environment Agency
Quality standards		Defra/WAG	Defra/WAG	Defra/WAG	Defra/WAG	Defra/WAG
		Environment Agency	Environment Agency	Environment Agency	Environment Agency	Environment Agency
Compliance of service delivery commitment		Environment Agency	Ofwat, Environment Agency	Ofwat, Environment Agency	Ofwat, Environment Agency	Ofwat, Environment Agency
Economic regulation (tariffs, etc.)		Environment Agency	Ofwat	Ofwat	Ofwat	Ofwat
Environmental regulation (enforcement of norms, etc.)		Environment Agency	Environment Agency	Environment Agency	Environment Agency	Environment Agency
Other (specify)		Monitoring, Assessment, Regulation, Management and Planning of WR: Environment Agency	Water supply services (and wastewater treatment) are delivered by private water companies, regulated by the EA, Ofwat and DWI			- Defra/WAG provides Government Policy - Environment Agency advises on and implements Government Policy

Co-ordination of water policy making across ministries and public agencies at central government level

Obstacles to horizontal co-ordination in water policy making

United Kingdom CG – Obstacles to co-ordination at central level



Existing mechanisms for co-ordinating the action across ministries and public agencies

Existing co-ordination mechanism across ministries/public agencies	Yes	No	Details (name, website, contact detail, description, examples, etc.)
A ministry of water			
A line ministry	X		• Department for the Environment Food and Rural Affairs (Defra), www.defra.gov.uk • Welsh Assembly Government, www.wales.gov.uk
A central agency for water related issues	X		The Environment Agency, www.environment-agency.gov.uk
An <i>ad hoc</i> high level structure (National Council, etc.)			
An inter-ministerial body (committee, commission, etc.)			
An inter-agency programme			
A co-ordination group of experts	X		UK Technical Advisory Group (UK TAG), who advise on the technical implementation of the Water Framework Directive
An inter-ministerial mechanism for addressing territorial water concerns			
Other (please specify)			
No specific co-ordination mechanism			

Institutional mapping of water policy roles and responsibilities at sub-national level: Allocation of roles across local and regional authorities**Allocation of roles and responsibilities in water policy design and implementation at territorial level**

Actors at sub-national level	Water resources	Water services			
		Water supply			Wastewater treatment
		Domestic	Agriculture	Industry	
Municipalities	Local Authorities	Local Authorities			
Regions (provinces, states in federal countries, autonomous regions, cantons, etc.)	Welsh Assembly Government	Welsh Assembly Government	Welsh Assembly Government	Welsh Assembly Government	Welsh Assembly Government
Inter-municipal bodies					
Water specific bodies (e.g. elected water boards, etc.)					
River basin organisations					
Other (specify)					

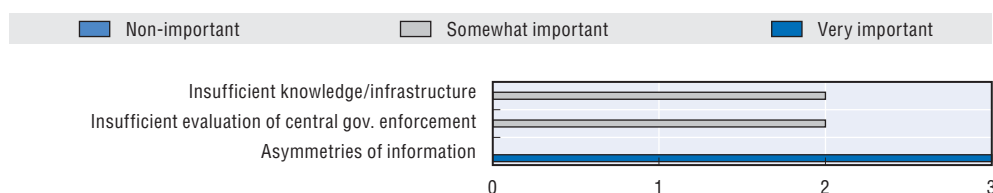
Allocation of roles and responsibilities in water regulation (rule production and enforcement)

Roles	Areas	Water resources	Water services			
			Water supply			Wastewater treatment
			Domestic	Agriculture	Industry	
Allocation of uses		Environment Agency	Environment Agency	Environment Agency	Environment Agency	Environment Agency
Quality standards		Drinking Water Inspectorate	Drinking Water Inspectorate	Drinking Water Inspectorate	Drinking Water Inspectorate	Environment Agency
			Environment Agency	Environment Agency	Environment Agency	
Compliance of service delivery commitment		Welsh Assembly Government Ofwat	Welsh Assembly Government Ofwat	Welsh Assembly Government Ofwat	Welsh Assembly Government Ofwat	Welsh Assembly Government Ofwat
Economic regulation (tariffs, etc.)		Ofwat	Ofwat	Welsh Assembly Government	Ofwat	Ofwat
		Welsh Assembly Government Environment Agency	Welsh Assembly Government	Environment Agency	Welsh Assembly Government Environment Agency	Welsh Assembly Government Environment Agency
Environmental regulation (enforcement of norms, etc.)		Environment Agency	Environment Agency	Environment Agency	Environment Agency	Environment Agency
Control at sub-national level of national regulations' enforcement		Welsh Assembly Government Environment Agency	Welsh Assembly Government Environment Agency	Welsh Assembly Government Environment Agency	Welsh Assembly Government Environment Agency	Welsh Assembly Government Environment Agency
Other (specify)						

Co-ordination of water policy making between levels of government and across local actors

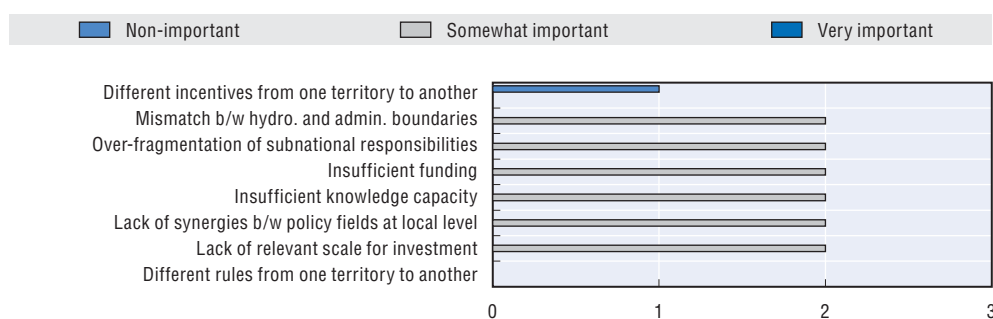
Obstacles to vertical co-ordination in water policy making

United Kingdom CG – Obstacles for vertical co-ordination



Obstacles to capacity building and co-ordination at territorial level

United Kingdom CG – Co-ordination and capacity challenges



Existing mechanisms for co-ordinating water policy between levels of government and at territorial level

Existing mechanism for vertical co-ordination and territorial effectiveness in water policy	Yes	No	n/a	Details (contact information, website, etc.)
River basin organisations/agencies		X		
Regulations for sharing roles between actors	X			
Co-ordination agency or commission		X		
Contractual arrangements (between central and local governments, central and regional governments, regional and local governments)	X			• WAG local government performance indicators • National Indicators
Intermediate bodies or actors (e.g. state territorial representatives)		X		
Financial transfers or incentives		X		
Performance indicators		X		
Shared databases			X	
Sectoral conferences between central and sub-national water players		X		
Multi-sectoral conferences		X		
Consultation of private stakeholders (profit and non-profit actors)	X			
Other (specify)				

Specific focus on selected mechanisms

Tools to manage the interface between actors at sub-national level

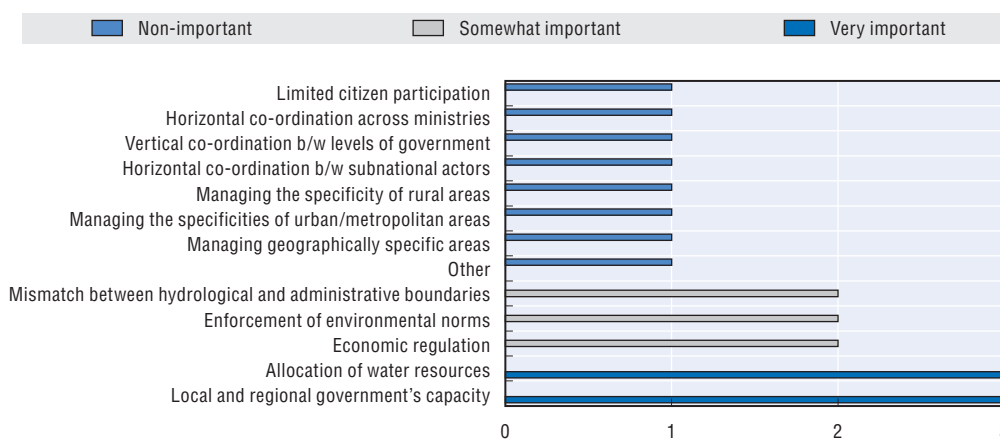
Existing mechanisms for co-ordination across different water actors at sub-national level	Yes	No	Details (name, example, contact information, website, capacity issues addressed, etc.)
Inter-municipal collaboration		X	
Inter-municipal specific body		X	
Specific incentives from central/regional government (in terms of rules, rewards and sanction mechanisms, budget allocation, etc.)		X	
Historical rules and traditions		X	
Specific mechanisms for conflict resolution		X	
Informal co-operation around projects		X	
Joint financing		X	
Metropolitan or regional water districts		X	
Other (specify)		X	

Tools for capacity building at sub-national level

Type of mechanism	Yes	No	n/a	Details (name, example, contact information, website, capacity issues addressed, etc.)
Broad governance mechanisms				
Collaboration with the private sector (know-how transfer, concession contracts, BOTs, etc.)			X	
Financial incentives (specify from whom and for what)			X	
Performance indicators and targets holding local governments accountable	X			Welsh Assembly Government Performance Indicators, http://wales.gov.uk/topics/planning/planningstats/pisinwales/?lang=en National Indicators for local authorities in England, www.communities.gov.uk/publications/localgovernment/indicators/definitions
Citizens' participation	X			Welsh Assembly Government consultations, http://wales.gov.uk/consultations/?lang=en
Involvement of civil society organisations			X	
Databases (sharing information)			X	
Historical arrangements (water courts, etc.)		X		
Other (specify)			X	
Management mechanisms				
Training – Workshops – Conferences	X			
Specific performance monitoring mechanism for staff (teams or individuals)		X		
Other (specify)			X	

Final assessment of remaining challenges

United Kingdom CG – Main challenges in water policy making



UNITED STATES (COLORADO)

Acronyms and abbreviations

DNR	Department of Natural Resources
DWR	Department of Natural Resources, Division of Water Resources
CGS	Department of Natural Resources, Colorado Geological Survey
CGWC	Department of Natural Resources, Colorado Ground Water Commission
SBE	Department of Natural Resources, State Board of Examiners
CWCB	Colorado Water Conservation Board
IBCC	Colorado Water Conservation Board, Interbasin Compact Committee
DPHE	Department of Public Health
WQCC	Department of Public Health, Water Quality Control Commission
WQCD	Department of Public Health, Water Quality Control Division
WWFOCB	Water and Waste water facility operators certification boards

**Institutional mapping of water policy roles and responsibilities at central government level:
Allocation of roles across ministries and public agencies
Design and implementation of water policies**

Roles	Areas	Water resources	Water services			
			Water supply			Wastewater treatment
			Domestic	Agriculture	Industry	
Strategy, priority setting, and planning (including infrastructure)		- Department of Natural Resources (DNR): Division of Water Resources (DWR), Colorado Geological Survey (CGS), Colorado Ground Water Commission (CGWC), State Board of Examiners (SBE) - Colorado Water Conservation Board (CWCB): Interbasin Compact Committee (IBCC) - Various State Water Conservancy Districts	- DNR: DWR, CGS, CGWC, SBE - CWCB: IBCC - Various State Water Conservancy Districts	- DNR: DWR, CGS, CGWC, SBE - CWCB: IBCC - Various State Water Conservancy Districts	- DNR: DWR, CGS, CGWC, SBE - CWCB: IBCC - Various State Water Conservancy Districts	- Water and Waste Water facility Operators certification Board (WWFOCB) - Various State and Local Wastewater reclamation Districts
Policy-making and implementation		Same as above	Same as above	Same as above	Same as above	Same as above
Information, monitoring and evaluation		Same as above and Dept. of Public Health and Environment (DPHE): Water Quality Control Commission (WQCC), Water Quality Control Division (WQCD)	Same as above and Dept. of Public Health and Environment (DPHE): Water Quality Control Commission (WQCC), Water Quality Control Division (WQCD)	Same as above and Dept. of Public Health and Environment (DPHE): Water Quality Control Commission (WQCC), Water Quality Control Division (WQCD)	Same as above and Dept. of Public Health and Environment (DPHE): Water Quality Control Commission (WQCC), Water Quality Control Division (WQCD)	Same as above
Stakeholders engagement (citizens' awareness, etc.)		Same as above (excluding DPHE, WQCC, WQCD)	Same as above (excluding DPHE, WQCC, WQCD)	Same as above (excluding DPHE, WQCC, WQCD)	Same as above (excluding DPHE, WQCC, WQCD)	Same as above
Other (specify)						

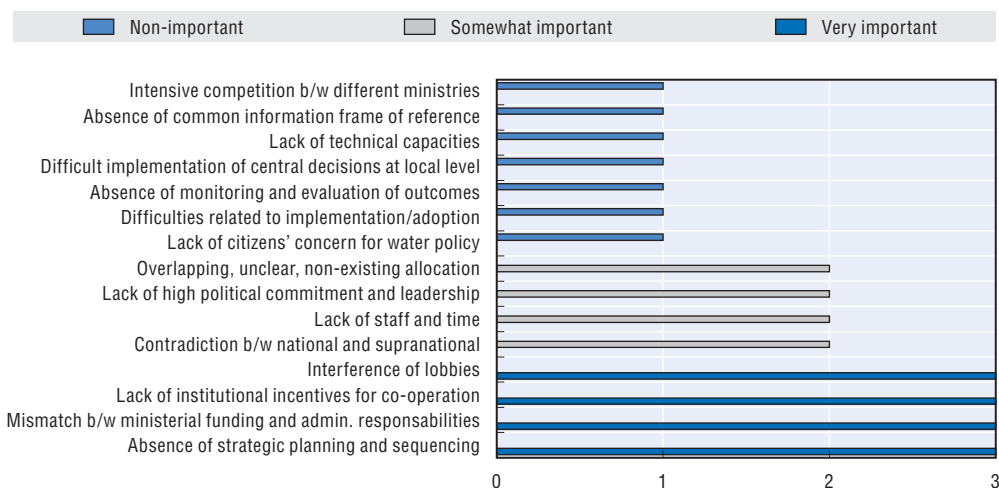
Institutional mapping for quality standards and regulation

Roles	Areas	Water resources	Water services			
			Water supply			Wastewater treatment
			Domestic	Agriculture	Industry	
Allocation of uses		DNR: DWR CWCB: IBCC Various State Water Conservancy Districts	DNR: DWR CWCB: IBCC Various State Water Conservancy Districts	DNR: DWR CWCB: IBCC Various State Water Conservancy Districts	DNR: DWR CWCB: IBCC Various State Water Conservancy Districts	WWFOCB, Various State and Local Wastewater reclamation Districts
Quality standards		DPHE, WQCC, WQCD	DPHE, WQCC, WQCD	DPHE, WQCC, WQCD	DPHE, WQCC, WQCD	Same as above
Compliance of service delivery commitment		Various State Water Conservancy Districts	Various State Water Conservancy Districts	Various State Water Conservancy Districts	Various State Water Conservancy Districts	Same as above
Economic regulation (tariffs, etc.)		Various State Water Conservancy Districts	Various State Water Conservancy Districts	Various State Water Conservancy Districts	Various State Water Conservancy Districts	Same as above
Environmental regulation (enforcement of norms, etc.)		DPHE, WQCC, WQCD	DPHE, WQCC, WQCD	DPHE, WQCC, WQCD	DPHE, WQCC, WQCD	DPHE, WQCC, WQCD
Other (specify)						

Co-ordination of water policy making across ministries and public agencies at central government level

Obstacles to horizontal co-ordination in water policy making

United States (Colorado) – Obstacles to co-ordination at central level



Existing mechanisms for co-ordinating the action across ministries and public agencies

Existing co-ordination mechanism across ministries/public agencies	Yes	No	Details (name, website, contact detail, description, examples, etc.)
A ministry of water	X		Colorado Division of Water Resources (DWR), http://water.state.co.us Phone: (303) 866-3581 • e-mail: AskDWR@state.co.us
A line ministry		X	Unsure what a "line ministry" is
A central agency for water related issues	X		DWR (see above contact info)
An <i>ad hoc</i> high level structure (National Council, etc.)		X	
An inter-ministerial body (committee, commission, etc.)		X	
An inter-agency programme		X	
A co-ordination group of experts		X	
An inter-ministerial mechanism for addressing territorial water concerns	X		Interbasin Compact Committee (IBCC), http://cwcb.state.co.us/about-us/about-the-ibcc-brts/Pages/main.aspx/Templates/Home.aspx
Other (please specify)			
No specific co-ordination mechanism			

Institutional mapping of water policy roles and responsibilities at sub-national level: Allocation of roles across local and regional authorities

Allocation of roles and responsibilities in water policy design and implementation at territorial level

Areas	Water resources	Water services			
		Water supply			Wastewater treatment
		Domestic	Agriculture	Industry	
Actors at Sub-national level					
Municipalities	X	X	X	X	X
Regions (provinces, states in federal countries, autonomous regions, cantons, etc.)	X	X	X	X	X
Inter-municipal bodies					
Water specific bodies (e.g. elected water boards, etc.)	X	X	X	X	X
River basin organisations	X	X	X	X	X
Other (specify)					

Allocation of roles and responsibilities in water regulation (rule production and enforcement)

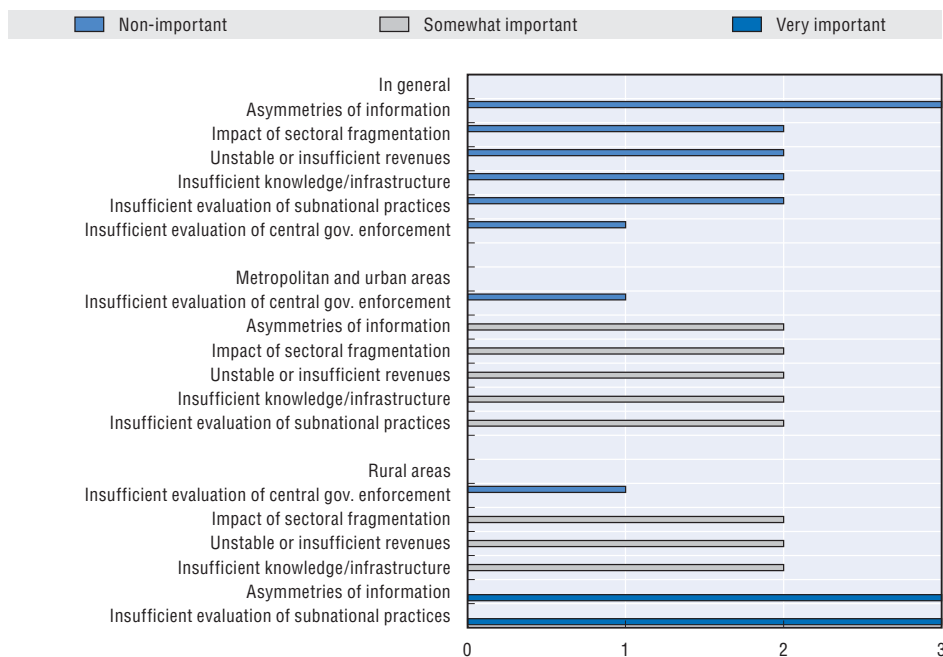
Areas	Water resources	Water services			
		Water supply			Wastewater treatment
		Domestic	Agriculture	Industry	
Roles					
Allocation of uses	Municipalities, Conservation Districts, Water Boards	Municipalities, Conservation Districts, Water Boards	Municipalities, Conservation Districts, Water Boards	Municipalities, Conservation Districts, Water Boards	Wastewater Municipalities
Quality standards	Same as above	Same as above	Same as above	Same as above	Same as above
Compliance of service delivery commitment	Same as above	Same as above	Same as above	Same as above	Same as above
Economic regulation (tariffs, etc.)	Same as above	Same as above	Same as above	Same as above	Same as above
Environmental regulation (enforcement of norms, etc.)	Same as above	Same as above	Same as above	Same as above	Same as above
Control at sub-national level of national regulations' enforcement	Same as above	Same as above	Same as above	Same as above	Same as above
Other (specify)					

Co-ordination of water policy making between levels of government and across local actors**Specific focus on selected mechanisms****River basin organisations**

Constituencies			
Type of actor or institution	Name		
Central government ministries or public agencies	No		
Local and regional authorities	No		
Private companies/actors	No		
Citizens and NGOs	Citizens of the jurisdiction		
Other			
Missions			
Functions	Yes	No	Details
Monitoring	X		
Co-ordination	X		
Regulation	X		
Data collection		X	
Pollution prevention	X		
Harmonisation of water policies at basin level	X		
Allocation of uses	X		
Planning	X		
Financing	X		
Infrastructure construction	X		
Other			
Monitoring			
Colorado water Conservation Board, http://cwcb.state.co.us/Pages/CWCBHome.aspx , Phone: 303-866-3441, cwcbnews@state.co.us			
Financing			
Type	Details		
Autonomous budget	No		
Grants from central government	Yes		
Grants from sub-national governments	No		
Other			

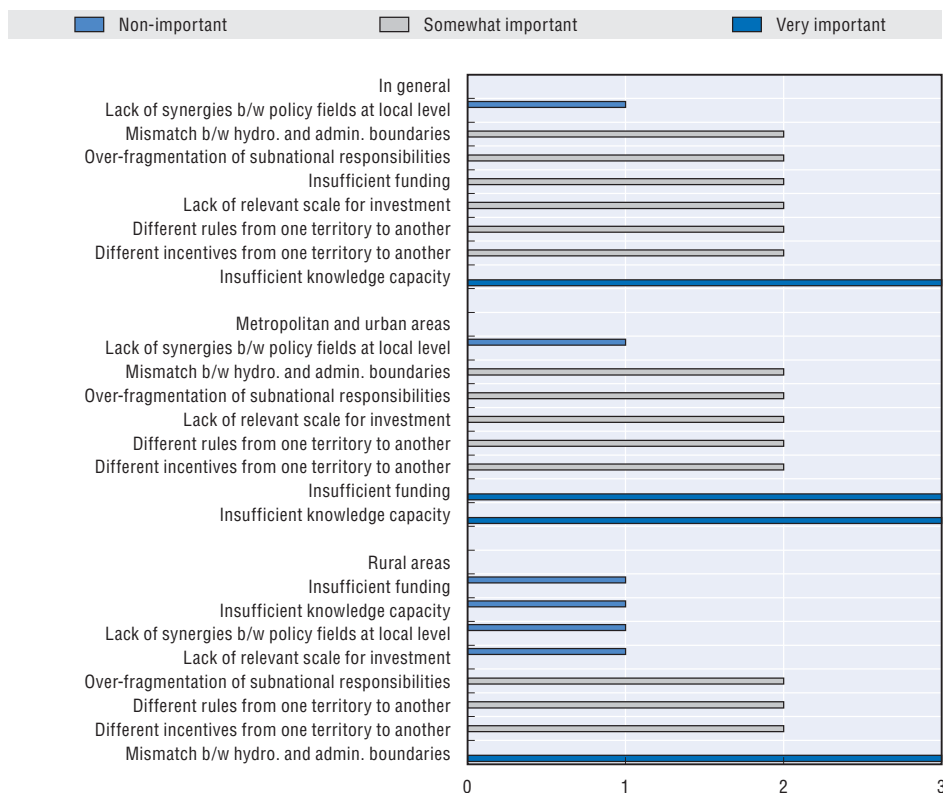
Obstacles to vertical co-ordination in water policy making

United States (Colorado) – Obstacles for vertical co-ordination



Obstacles to capacity building and co-ordination at territorial level

United States (Colorado) – Co-ordination and capacity challenges



Existing mechanisms for co-ordinating water policy between levels of government and at territorial level

Existing mechanism for vertical co-ordination and territorial effectiveness in water policy	Yes	No	n/a	Details (contact information, website, etc.)
River basin organisations/agencies	X			Inter Basic Compact Committee, http://cwcb.state.co.us/about-us/about-the-ibcc-brts/Pages/main.aspx/Templates/Home.aspx
Regulations for sharing roles between actors		X		
Co-ordination agency or commission		X		
Contractual arrangements (between central and local governments, central and regional governments, regional and local governments)	X			
Intermediate bodies or actors (e.g. state territorial representatives)		X		
Financial transfers or incentives	X			The financial incentive is the pooling of funds between state and local groups
Performance indicators		X		
Shared databases		X		
Sectoral conferences between central and sub-national water players	X			State and local agencies will often hold joint conferences on particular water topics
Multi-sectoral conferences	X			
Consultation of private stakeholders (profit and non-profit actors)	X			There are often citizen outreach and stakeholder identification efforts
Other (specify)				

Tools to manage the interface between actors at sub-national level

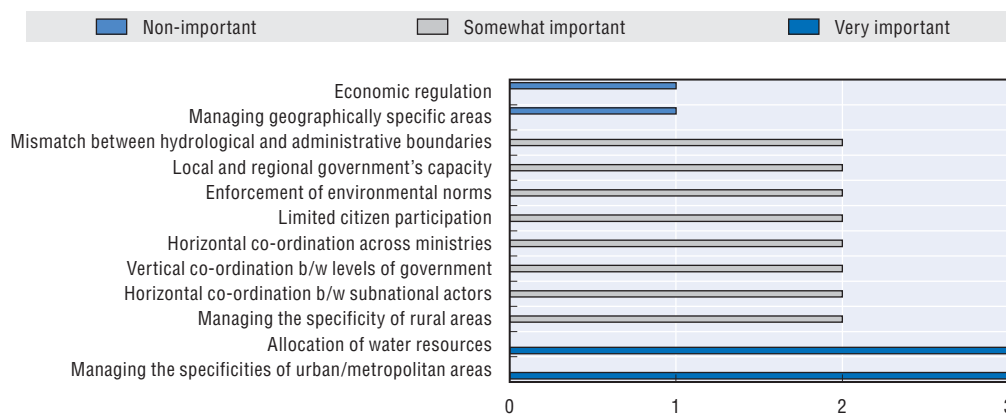
Existing mechanisms for co-ordination across different water actors at sub-national level	Yes	No	Details (name, example, contact information, website, capacity issues addressed, etc.)
Inter-municipal collaboration	X		Happens often between dozens of different municipalities
Inter-municipal specific body	X		
Specific incentives from central/regional government (in terms of rules, rewards and sanction mechanisms, budget allocation, etc.)	X		
Historical rules and traditions	X		Colorado water law is based on a degree of historical usage
Specific mechanisms for conflict resolution	X		Primarily Colorado Water Court; but more recently water users have been looking to IBCC and other regional and statewide groups designed to facilitate collaborative solutions
Informal co-operation around projects	X		
Joint financing	X		Often necessary to finance large scale projects that will be beneficial to multiple districts
Metropolitan or regional water districts	X		
Other (specify)			

Tools for capacity building at sub-national level

Type of mechanism	Yes	No	n/a	Details (name, example, contact information, website, capacity issues addressed, etc.)
Broad governance mechanisms				
Collaboration with the private sector (know-how transfer, concession contracts, BOTs, etc.)	X			Purchase of senior water rights
Financial incentives (specify from whom and for what)	X			State and federal funding for grants and low interest loans although budget issues have made funding scarce
Performance indicators and targets holding local governments accountable	X			Often agreements will be made about how much water municipalities or boards are allowed to remove
Citizens' participation	X			
Involvement of civil society organisations		X		
Databases (sharing information)	X			
Historical arrangements (water courts, etc.)	X			
Other (specify)				
Management mechanisms				
Training – Workshops – Conferences	X			
Specific performance monitoring mechanism for staff (teams or individuals)				
Other (specify)				

Final assessment of remaining challenges

United States (Colorado) – Main challenges in water policy making



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Water Governance in OECD Countries

A MULTI-LEVEL APPROACH

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