Natural resources can generate and sustain growth, thereby reducing poverty and supporting the achievement of the Millennium Development Goals (MDGs). It is therefore urgent to improve natural resource management for long-term pro-poor economic growth, i.e. a pace and pattern of growth that enhances the ability of poor women and men to participate in, contribute to and benefit from growth.

Moreover, the international context of natural resource management is changing. Many emerging economies are major importers of natural resources. This increased demand for natural resources makes improved resource management even more urgent.

This publication focuses on the economic dimensions of natural resource management. It is intended to encourage decision makers from development co-operation agencies and ministries of finance and planning in partner countries to recognise the contribution of natural resources to pro-poor growth and the importance of policies which nurture their sustainable management.

It also provides an overview of the “politics” of natural resource management, aimed at identifying the roles and influence of different stakeholders and their incentives and disincentives for sustainable natural resource use. It points to the need for innovative coalitions to drive change and promote sustainable management. Past approaches that focused on more technocratic interventions have often overlooked these political challenges. Additionally, ways to increase policy coherence for development in natural resource management are outlined. Policy makers in OECD and partner countries, as well as development co-operation agencies, are in prime positions to address the political challenges of natural resource management for long-term pro-poor economic growth.

Seven natural resource sectors are examined which have a critical role to play in sustaining pro-poor growth. They are: fisheries, forests, wildlife and nature-based tourism, soil productivity, water security, minerals and renewable energy. They are all key natural resources which, if effectively managed, can contribute to sustainable pro-poor growth.
initial conditions (particularly levels of inequality in incomes and assets) and whether growth occurs in areas and sectors where the poor live and are economically active. The pattern and pace of growth are thus interlinked and need to be addressed together in order to have a substantial and sustained impact on poverty reduction.

While the proportion of the world's poor living in towns and cities is gradually rising, most of the world's poor will continue to live in rural areas for many decades to come. Poor people's livelihoods will remain heavily dependent on natural resources: soil, water, forests and fisheries underpin commercial and subsistence activities and often provide a safety net for the poor in times of crisis. Strategies for rural poverty reduction, including pro-poor natural resource management, should remain at centre stage for poverty reduction.

**Natural capital contributes directly to economic incomes, employment and fiscal revenues.** Natural resources, renewable and non-renewable, are fundamental to economic activity in many ways. Goods produced from renewable natural capital include timber and non-timber forest products, catches of wild fish, etc. Goods produced from non-renewable natural resources are mainly oil and minerals. These goods form the basis of the economy in many developing countries. Examples include the forestry wealth of Cameroon and Indonesia and the fishery wealth of Mauritania and the Pacific islands. Nature-based tourism is an important component of the international tourist receipts earned in some low income countries in Africa, Asia and Latin America. Soil and water resources are essential for agricultural activities, a key part of the economy in many developing countries. Mineral extraction contributes considerably to the wealth of countries such as Kuwait and Botswana. Renewable energy can play a key role in providing poor people with energy access.

Natural capital is particularly important in developing countries. It accounts for an estimated 26% of total wealth in low-income countries, 13% of wealth in middle-income countries and only 2% of wealth in industrialised or OECD countries. Moreover, primary production represents a much higher share of production, domestic trade, exports and national income in developing countries compared with that in industrialised countries. Natural resource-based enterprises thus provide important employment and income opportunities.

![Figure 3.1. Composition of total wealth in low-income countries](image-url)
Natural resources underpin the livelihoods of many among the poorest. The poor are often highly dependent on “common property” natural resources, which include fallow fields, forests, fishing grounds, pastureland and wetlands, for their livelihoods. For many rural poor, common property natural resources are an important source of food, fodder, fuel, building materials, medicinal plants and income. In India, it has been estimated that common property resources provide about 12% of household income to poor families. In general the poorer the household, the more important is the income contribution through common property resources.

Natural resources generate a wide range of positive externalities at the local, national and global levels. In addition to goods, natural resources produce services; for example, water filtration and purification services provided by wetlands or regulations of water cycles provided by watersheds. Local or national-level natural resource services include, for example, the soil stability provided by upstream vegetation in a watershed, which contributes to the good functioning of downstream water supply, irrigation or hydroelectric facilities. Global level services include carbon sequestration by forests or soils, which helps mitigate climate change.

Sustainable natural resource management raises unique challenges. Sustainable management of resources rests on a capacity to monitor the evolution of stocks and take corrective action in cases of significant degradation or decline.

Natural resource management gives rise to unique challenges. Natural resource-based economies are vulnerable to “boom and bust” cycles, i.e. trade shocks caused by sharp falls in the prices of main export commodities. In addition, when a country suddenly discovers large quantities of natural resources and starts exporting them, or an existing resource sector increases its weight in the export market quickly, this can result in a significant change in the rate of exchange which in turn can lead to a decrease in competitiveness of other sectors. This situation is known as “Dutch disease”. Stabilisation funds, specific public investment funded by windfall revenue, the use of conservative price assumptions for major export commodities, export diversification, appropriate use of tax systems, and keeping external debt at a sustainable level are some important policy responses to these “boom and bust” cycles and “Dutch Disease”. Payment for environmental service schemes and specially designed market mechanisms for environmental services such as carbon sequestration may also help to address the “absent market” challenge.

Furthermore, the international context of natural resource management is changing. Many emerging economies are major importers of natural resources. This increased demand for natural resources makes improved resource management even more urgent.

With sound management, natural resources can provide the basis for long-term sustainable pro-poor growth. To ensure that natural resources help not only support but also sustain growth, they need to be used efficiently, equitably and sustainably. For example, their commercial value can be maximised through increased quality or processing and their productivity can be increased through investment in human and man-made capital. Fiscal revenues can be channelled towards pro-poor investments, while framework conditions for policies that promote diversification away from natural resource extraction can facilitate more value-added activities.

The conversion of natural resources into other forms of capital, including social and human capital, can provide a basis for sustainable growth only if certain conditions are met (e.g. through investment in education). Decisions to convert natural resources into other forms of wealth must take into account all relevant social, economic and environmental factors. There are often trade-offs between different stakeholders as well as critical thresholds of conversion which must not be reached. Beyond certain limits, natural resource wealth and the associated flow of economic, social and environmental benefits can collapse, sometime irreversibly. Certain natural resources are irreplaceable and need to be preserved to sustain long-term growth and inter-generational equity.
The political and governance dimensions play a key role in pro-poor natural resources management. Governance of natural resources should be informed by the characteristics of those resources, the actors involved and the institutional framework and rules. The special characteristics of natural resources (such as unclear property rights, multiple claims and functions, lack of market prices, remote location and difficult access), in combination with weak institutions, give rise to special challenges in this regard.

These challenges include, in particular, the potential for elite groups to monopolise access to resources and exclude the poor. As a result, the benefits from natural resources often accrue to a small elite and do not contribute to the country’s growth, let alone contribute to lifting people out of poverty. Aside from issues linked to corruption and poor governance, the multiple potential uses of natural resources – often mutually exclusive – give rise to a host of trade-offs and competing interests and objectives.

Governance of natural resources requires choosing policies that have political dimensions, such as market-based measures, regulation, co-operation, and information. The distributional impacts of these policies vary. To ensure pro-poor results, particular attention should be paid to a meaningful participation of the poor in governance processes.

Political change cannot be imposed from the outside. It must be based on broad ownership of decision-making processes. “Coalitions for change” (led by the poor themselves, their mass organisations, civil society organisations, politicians, government bodies, the private sector and development agencies) can facilitate policy changes in support of natural resource management for pro poor growth. A key challenge of political change is to move changes initiated at the local level up to the national level.

Conclusions and recommendations for policy makers

Some fundamental facts deserve more attention from policy makers if growth is to unfold its full potential for lasting poverty reduction. First, poor countries are much more dependent on natural resources as economic assets than are rich countries. Second, natural resources are a major - if not the major - asset of the poor. Third, the international context of natural resource management is changing. Many emerging economies are major importers of natural resources. This increased demand for natural resources makes improved resource management even more urgent.

Policy makers in OECD and developing countries as well as development co-operation agencies can play an important role in promoting political change to support natural resource management for pro-poor growth. First, development co-operation can facilitate improved natural resource management, for example, by funding projects to build the capacity of community-based co-operatives or organisations to manage natural resources. It can encourage clarification of land tenure and resource rights of the local poor including customary tenure and resource management rights. It can promote the use of tools such as participatory rural appraisal, strategic environmental assessment and poverty and social impact assessment to enhance long-term thinking and pro-poor strategic planning of natural resource use. Second, policy coherence for development should be enhanced. This implies making sure that the policies of industrialised countries in areas other than development co-operation give support to, or at least do not undermine, efforts by developing countries to attain internationally agreed development goals. Policies of emerging economies have to be aligned with these goals as well. Third, existing and potential future multilateral environmental agreements must be negotiated in a manner that is particularly sensitive to the needs of the poor. This requires political support for improved and secured access of the poor to natural resources in the context of negotiations of multilateral environmental agreements.

Checklist for practitioners

A checklist at the end of Part One aims to translate key messages into concrete action. It contains indicative questions on natural resources and pro-poor growth linkages. These questions can be considered and addressed by practitioners of natural resource management in development agencies and their partners in developing countries to improve natural resource management.
This section examines seven natural resource sectors which have a critical role to play in sustaining pro-poor growth: fisheries; forests; wildlife and nature-based tourism; soil productivity; water security; minerals; and renewable energy. These have been selected as key resources of which the improved management can contribute to the growth process and in particular sustainable pro-poor growth. To support the analysis, a number of case studies have been prepared and are available on the Internet (www.povertyenvironment.net/pep).

**Fisheries**

Fisheries are an important source of wealth for many coastal and island developing countries. With about 95% of the world's 35 million fishermen living in developing countries, fisheries provide a critical source of food for millions. Internationally traded values in fish products from developing countries far exceed all other export commodities, and some countries generate up to 30% of their fiscal revenues through fisheries.

Fish stocks in many coastal areas of the developing world are severely threatened by overfishing. Institutional weaknesses, lack of capacity for effective policy implementation, as well as the migratory and open access character of fish resources underlie overexploitation. To reconcile the joint objectives of growth, poverty reduction and the safeguarding of the fishery resource, effective resource management is needed. Several political and management challenges in the fisheries industry, including illegal and unreported fishing, have to be addressed. Additionally, difficult choices on potential trade-offs between large-scale industrialised fishing and local small-scale fishermen have to be made, and more public revenues from fisheries have to be generated. Notwithstanding these challenges, with improved management fisheries can contribute increasingly to pro-poor growth, as several countries have shown.

**Forestry**

The forest industry is a major source of growth and employment. In many countries, the sector contributes more than 10% to GDP and provides formal and informal employment in developing countries for an estimated 40 to 60 million people. Developing countries also rely on timber for export earnings. Over 90% of the people living in extreme poverty depend on forests for some part of their livelihoods. But global forest cover has been reduced by at least 20% since pre-agricultural times. While forest area has increased slightly since 1980 in industrial countries, it has declined by almost 10% in developing countries.

Natural forests, as distinct from tree plantations, are valuable resources that are under state ownership in most countries. But weak enforcement of forest management regulations and large-scale corruption limit the potential of forest for poverty reduction in many states. Better institutions are needed both for ensuring the long-term sustainability of the forest sector and for the purposes of improving revenue capture by the state. There are positive experiences in South Asia, Latin America and Africa from which lessons can be learned.

**Wildlife and nature-based tourism**

Wildlife plays an important safety net role for many poor people. It provides food, fibre and medicines – but it can also be a source of wealth creation. An estimated 150 million poor people (one eighth of the world's poorest) perceive wildlife to be an important livelihood asset.

Nature-based tourism holds high potential for wildlife-based economic growth. It is one of the fastest growing segments of the global tourism industry, and one of the few export/service sectors in which poor countries have (or can develop) a clear comparative advantage as a result of their often rich natural resource base. Trophy-hunting can be a particularly lucrative sector of this industry for some states, generating significant public revenues in countries such as Tanzania.

Wildlife trade also deserves far greater attention – generating an estimated USD 15 billion per annum worldwide, excluding large-scale commercial trade in fish and timber. But overexploitation of species and
illegal wildlife trade can be very economically and ecologically damaging. Better management, regulation and controls are needed to realise the potential of wildlife trade for pro-poor growth.

**Soil productivity**

Soil productivity is essential to agricultural growth, food security and support of the livelihoods of the poor. Agriculture is the major engine of economic growth in most developing countries, and growth in agriculture is particularly effective in reducing poverty. Low-income countries have the highest share of agriculture in GDP (typically, around 30%), as compared to less than 4% in high-income countries. Furthermore, a 1% increase in agricultural GDP leads to a 1.6% increase in the per capita income of the poorest fifth of the population. Additionally, the agricultural sector has to meet the food needs of an additional 1.7 billion people over the next 20 years. But pro-poor growth and food production are at risk from severe soil degradation.

Soil degradation has reduced agricultural productivity by 1% to 9% in Africa. More than 16% of the cropland and drylands in low-income countries have been degraded moderately or severely, primarily through soil erosion, nutrient depletion and salinisation. Soil degradation ranks among today’s greatest environmental challenges. Considering the enormous cost of soil degradation, investment in improving soil fertility is remarkably low for a variety of reasons related to tenure, access to credit and markets as well as fiscal and trade policies. Given the growing pressure on land in the developing world, the economic value of soil conservation is likely to increase.

**Water security**

In many of the world’s poorest countries, there is often a strong correlation between rainfall variability and GDP performance. The importance of the contribution of water resources to pro-poor growth lies in the irreplaceable role of water for drinking and washing in the daily lives of every human being as well as in its role as an input into other sectors such as (irrigated) agriculture, energy and industry and other sectors. While developed countries have managed to harness water resources to sustain economic development through investments in institutions and infrastructure, least-developed economies are often challenged by marked climate seasonality, variability and/or rainfall extremes, while capacity, institutions and infrastructure to manage and mitigate these potentially major challenges are generally inadequate.

There is a re-emerging consensus that water resources development and management are essential not only for human well-being but also to generate wealth, mitigate risk, and alleviate poverty. Many developing countries will need to make large investments in water infrastructure at all levels. Furthermore, greater attention must be paid to institutional development, to the environment and to a more equitable sharing of benefits and costs.

**Minerals**

The mineral industry extracts non-renewable resources. To create and sustain wealth in the long term, mineral resources have to be converted into other forms of capital (human, social, financial and manufactured) and more sustainable livelihood opportunities.

Mining is an important source of growth, government revenues and foreign investment in many developing countries. The sector employs an estimated 22 to 25 million people worldwide, most of whom are abjectly poor. It includes those working in the artisanal (self-employed, independent and/or subsistence) and small-scale mining operations in developing countries. Furthermore, the economic importance of the sector is increasing. Between 2000 and 2005 the value of world trade in minerals grew by 17% annually. Mineral prices are volatile and have risen significantly in the past five years, driven in part by high demand and growth rates in China and India.

But mineral wealth does not automatically lead to economic prosperity and poverty reduction. Some resource-rich countries are among the poorest of the world and have high levels of corruption and conflict. The challenge is to recognise the potential for the “resource curse” and work effectively to counter it. Good governance, strong institutions, effective regulation and rigorous environmental and social safeguards are
needed to realise the potential of mineral wealth for pro-poor growth. Both OECD and developing countries have shown how well-governed mineral wealth exploitation can power development.

**Renewable energy**

Renewable energy can play a key role in providing a more sustainable, equitable and secure energy supply for sustaining pro-poor economic growth and supporting the achievement of the MDGs. Access to energy is one of the keys to development and economic growth, as it provides light and heat, and powers productive and reproductive uses and telecommunications. But current energy systems are unable to provide energy to all people in a sustainable and affordable way. It is estimated that 1.6 billion people do not have access to modern forms of energy, most of them living in rural areas in developing countries, far from centralised energy systems. Hence recognition is growing that new sources and patterns of energy supply and consumption, in particular forms of decentralised renewable energy, are needed to move toward greater sustainability.