

OECD-World Bank Review of Higher Education in Regional and  
City Development

# The Bío Bío Region, Chile



## **Assessment and recommendations**

### **Towards a region that reaps rewards from investment in higher education**

Chile is Latin America's most successful economy and enjoys great natural wealth. Over recent years the country has made progress not only in economic development, but also in educational reforms. Despite this progress, higher education attainment rates and the R&D intensity remain low. The current OECD/World Bank Review of Higher Education in Regional and City Development in the Bío Bío Region confirms that Chile is ready for the second generation of higher education reforms to improve quality of education, to address challenges in equity and to improve employability outcomes and knowledge transfer. For reasons of both equity and competitiveness, education and the improvement of human capital should continue to be a priority for the Chilean government also in the coming years.

Chile has made greater decentralisation a priority in order to unleash the potential of its regions. Regional planning has been transferred to regional governments and promising reforms are underway. But more work is needed. In spite of recent measures, Chile remains centralised with more pronounced regional disparities than in most OECD countries. Administrative and financial limitations remain, and the regional agenda continues to be determined by national guidelines. There is a concentration around Santiago in the Metropolitan region in terms of decision making, business activity, work force, higher education and R&D. In addition, the concentration of Chile's innovation system slows down the development of regional innovation systems.

### **A closer look at the Bío Bío Region**

Despite slow progress, the decentralisation process is building capacity in the fifteen regions of Chile. It has also created a window of opportunity in the Bío Bío Region which has traditionally been a national pioneer in

regional development and regional innovation policy. As part of its long term objectives, the Bío Bío Region aims to strengthen the decentralisation process, improve the quality of its human resources, increase the rates of technological innovation and strengthen the productive sector, competitiveness and rates of value added in the regional economy. The Agenda for Innovation and Regional Competitiveness identifies higher education and science and technology as one of the strategic areas for 2008-12 that will receive funding on the basis of Programmes for Improvement of Competitiveness (PMC, in its Spanish acronym, “Bío Bío Educates and Innovates”). The regional government is thus not only fully aware of the benefits of the decentralisation process, but also of the potential role that the higher education institutions can play in achieving these goals.

With 1.9 million inhabitants, the Bío Bío Region is the second most populated region in Chile. It is also the second most important region in terms of its contribution to the Gross Domestic Product. The regional economy relies on manufacturing, services and low value added products from primary industries, agriculture, fishery and forestry. Furthermore, the region is characterised by a “dual economy”: on one side, there are big, productive firms in forestry and in the steel industry, and, on the other, a wide array of small and medium-sized enterprises which represent 80% of employment. The few leading edge companies tend to be located in the central city of Concepción or controlled from outside of the country. There are few spill-overs from big firms in terms of job creation and supply chains. The rate of firm creation is one of the lowest in the country. The rate of unemployment is higher than the national average and there is also evidence of brain drain.

In this context, the region faces a triple challenge:

- How to promote new business formation?
- How to support the development of the existing SME base?
- How to address the hard core problems of poverty and inequity by creating opportunities for growth.

To face these challenges, the Bío Bío Region and its higher education institutions need to be involved in joint efforts to develop a long term strategy for the region. A reform is necessary in higher education institutions to facilitate more professional institutional management and student-centred learning experience. In order to improve regional development outcomes, evidence-based decision making at all levels and institutions needs to be adopted. In addition, job creation should be seen as the primary goal of innovation and human capital development.

## **Human capital development in the Bío Bío Region**

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*The Bío Bío Region has made impressive progress in widening access to education. The increase in higher education participation has included students from all sectors of the society...*

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The Bío Bío Region is a “human capital factory”, second only to the Metropolitan region, in terms of number of higher education institutions, student enrolment, teachers and researchers. In 2007, the region concentrated 11.9% of the supply of undergraduate programmes, 12.8% of the national higher education enrolment and 12.7% of all the headquarters of higher education institutions in Chile. Recent decades have witnessed rapid progress in education. For example, the adult literacy rate in the region almost doubled in the last decade, and now stands at well over 90%. Likewise, levels of educational attainment have increased significantly, with 21% of the population having completed some form of higher education – an increase from 13% in the last decade. Between 1983 and 2007, the number of enrolled higher education students in the Bío Bío Region expanded more than threefold, growing from 21 000 to 94 000. Finally, the higher education participation rate in the region among the 18-24 year-old age increased to 39.9%, constituting a significant increase from less than 14% in 1990. The participation rate is three percentage points higher than the national average.

Considerable progress has been made in widening access to higher education, particularly in terms of students from lower socio-economic background. The increase in higher education attainment is correlated with reduced poverty rates in the Bío Bío Region. The rate of poverty has fallen by over 50% in recent decades, with the most significant reduction occurring at the lowest income levels. However, 21% of the population is classified as poor or indigent, compared to a national average of 14%. Furthermore, low-income potential students continue to be less likely to enrol in higher education than those from the upper-income strata of the society.

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*...but challenges remain in order to continue and consolidate the gains accomplished while better aligning the education system to the region's needs...*

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The rate of unemployment in the Bío Bío Region is consistently higher than the national average: 8.7% in 2008 as compared to 7.7% nationally. At the beginning of 2009, the region's average unemployment had grown to 11%, reaching 18% in some rural areas. Unemployment is structural in nature and linked to shifts in the regional economy. Wage levels are lower in the region and higher education graduates earn less than their peers elsewhere in Chile. This may suggest that the region is over-supplied, on a relative basis, with higher education graduates. It may equally suggest a misalignment between what higher education offers and what regional labour market needs. These factors may have contributed to Bío Bío Region's high "brain-drain" rate: the region today is a net exporter of undergraduates to other parts of the country, mainly to the Metropolitan Region. In 1997-2002, net migration was of 19 000, or about 1% of the regional population.

The rapid increase in higher education enrolment has contributed to high dropout rates. Throughout Chile, 58% of all students drop out before completing a degree, in comparison with the OECD average of 29.6%. The reasons for the high drop-out rates are manifold, ranging from insufficient preparation of students in primary and secondary education to inadequacies in the university admission systems, overly long degree programmes, inflexible curricula and outdated classroom practices. Detailed student data about dropout and academic progress is lacking both at the regional and institutional level.

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*...and reforms are necessary to reduce the dropout rates...*

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Most higher education institutions also have remedial courses to reduce the dropout rates. Some institutions, for example Universidad Católica de la Santísima Concepción, have adopted comprehensive institution-wide responses addressing the social, financial and learning difficulties of their students. Recent experience shows that reducing dropout rates is a challenge that can be overcome. For example, the University of Bío Bío is collecting and analysing data to address the dropout problem as a part of the Programme for the Quality and Equity Improvement of Higher Education (MECESUP). The university has reached measurable results in reducing the dropout rate from 48% in 2008 to 37% in 2009. Also, policies that tie student graduation rates to institutional financial obligations under the State-Guaranteed Student Loan Program (CAE in its Spanish acronym) should help decrease dropout.

Educational reforms at the secondary level are necessary to ensure better preparation of all students. In the first instance, it is up to the school

authorities to work towards improving the quality of education in Chile. Higher education institutions can, however, reach out to local schools to improve the preparation for higher education. The higher education institutions in the Bío Bío Region, supported by a special funding from the Ministry of Education, are running an impressive number of school outreach projects to raise aspirations and academic performance of students at local schools and to improve the quality of teaching and school management.

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***...to improve graduation rates and labour market relevance of education and to boost entrepreneurship...***

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Several larger higher education institutions in the Bío Bío Region are primarily focused on national labour markets and career-focused education provision. There is a need to move away from supply-driven orientation to more demand-led education provision, to strengthen the development of competencies of the students and to build stronger links between higher education institutions and labour market. This could be achieved through a wide range of measures, including credit bearing work-based learning for students, expansion of problem-based learning methods in collaboration with the local industry and other employers as well as participation of employers in the curriculum and course design. In addition, the use of local private sector employees as instructors and supporting the movement of university researchers/teaching staff on a temporary basis to the private sector would be useful ways of improving the labour market relevance. Furthermore, improving active language skills of all students and faculty are necessary if the region wishes to position itself in the global market. Positive development in improving the labour market relevance is taking place in a handful of institutions, including the leading private universities, for example the Universidad del Desarrollo and INACAP which have developed its educational approach based on “learning by doing”. At the national level, higher education reform is facilitated by the Ministry of Education’s MECESUP programme. It is, however not accessible to all accredited institutions; technical tertiary institutions, for example, have only limited access to MECESUP funding, which focuses mostly on universities. As a consequence, initiatives to improve labour market relevance of higher education remain in most instances discipline-based rather than institutionally driven.

The Bío Bío Region has a low rate of business creation in comparison to other regions of Chile. Finding ways of increasing entrepreneurship could be an effective strategy for job creation. Higher education institutions in the region have taken steps to boost university spinoffs and graduate

entrepreneurship, mainly through incubators, but there is limited collaboration between the institutions. There is, moreover, limited offer of entrepreneurship training to students. Provision of entrepreneurship programmes should be scaled up, focusing on growth-oriented entrepreneurship while not neglecting social and cultural entrepreneurship, and by using interactive and experiential teaching methods.

Due to the rapidly changing skill requirements, skills upgrading, re-skilling and other forms of lifelong learning are becoming increasingly important. To date, the higher education institutions in the Bío Bío Region remain more oriented to meet the needs of traditional students than those of adult learners. While the institutions are aware of the needs of adults and have some programmes in place for them, not enough robust data is available to understand the needs of this population or the efficacy of higher education in meeting them. Flexible ways of provision should be scaled up for the benefit of non-traditional learners, who often combine work and study.

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***...and to address the fragmented governance architecture and the segmentation of the education system.***

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One of the main issues impeding human capital development in the Bío Bío Region is the fragmented governance architecture and the absence of a region-wide coordinating structure and mechanisms to articulate a long term vision and implement an integrated development strategy for all educational institutions.

Transparent pathways for students through the education system are required. This involves the development of stronger credit recognition schemes, course and programme articulation agreements, clear and enforceable policies related to credit transfer and increased support for joint and collaborative programmes.

The segmentation of university and non-university sectors acts as an impediment for student mobility and human capital development. Immediate measures are needed to raise the attractiveness and prestige of technical tertiary education. A potential step in this direction could be the establishment of a national qualifications framework to facilitate progression from one degree type to another, to allow credit for previous academic and job-related experiences and competencies, and to ease transitions between areas of study. The transition toward a national qualifications framework would benefit from including a review of all tertiary curricula, to make them

more flexible and address excessive study hours and theoretical content in degree programmes.

***The following measures would promote human capital development in the Bío Bío Region:***

- Regional government, higher education institutions, other educational institutions and key stakeholders of the economy and society should work together to establish a Regional Human Capital Development System to define region-wide goals, policies and priorities extending from primary to tertiary education. As part of this system, higher education institutions and regional government should consider establishing a higher education coordinating body that would define goals, policies and priorities within the region. A major function of this body would be to evaluate how well the higher education system is delivering the amount and quality of skills needed by the labour markets.
- Higher education institutions and regional government and interested parties should work together to improve the data on labour market needs and trends. Higher education institutions should systematically monitor student progress as well as students' labour market outcomes and graduate destinations (out-migration). The most effective region-wide graduate labour market systems are based on the collection of comprehensive labour market intelligence and the on-line publication of the data in a single place to improve students' ability to make rational choices about their studies and to help graduates and employers come together and move toward employment. Also a key is to use the data strategically to identify regional priorities and at an institutional level, to respond to the data in terms of course provision and the supply of employer specific skills.
- Higher education institutions and regional government should take steps to significantly expand higher education opportunities for working age adults. These steps should create clear and transparent pathways to advanced education for adults, including the ability to attend multiple institutions, obtain short-term education and training that can later be applied to degrees, and re-skilling and up-skilling courses and programmes designed around the needs of adults who often combine work and study. This involves the development of a qualifications framework: strong credit recognition schemes, course and programme articulation agreements, clear and enforceable

policies related to credit transfer and increased support for joint and collaborative programmes.

- Higher education institutions and regional government should continue to expand efforts to increase the enrolment and success of students who are the first in their families to pursue higher education degrees. This includes building upon existing models of academic and social support services for students, increasing institutional and state aid to students as well as moving away from teacher-centred learning methods.
- Higher education institutions should continue to strengthen their efforts to improve completion rates. The efforts of several higher education institutions in the region have shown genuine promise, and these efforts should be supported, expanded, and disseminated as models to other institutions.
- Higher education institutions should focus on the employability and entrepreneurial skills of graduates; providing them with the skills and competences needed in a globalised knowledge economy. Work and problem-based learning methods and programmes to build entrepreneurship skills would improve retention after graduation in the region. Similarly, efforts in language learning could help the region in its internationalisation efforts. All degree programmes should include compulsory English.
- Employers and regional government should acknowledge the increasing relevance and importance of education in technical employment fields. There is clear evidence that needs and opportunities are growing in these fields, but that these trends are under-recognised in the region and within higher education.

## **Regional innovation in the Bío Bío Region**

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*The Bío Bío Region has been a pioneer in incorporating the concern for innovation capacity and performance into its overall regional economic development efforts...*

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The Bío Bío Region is a clear leader in Chile in making innovation a pillar of its economic development and future prosperity. It has excelled in numerous areas of planning, co-ordination, analysis, goals setting, prioritisation and consensus building. It has a coherent plan with well

articulated long term goals. It has used systematic analysis to convert long-term strategy into short- and medium-term targets in specific sectors. It has pioneered new agencies and organisational arrangements, some of which have become national models. These include the regional development agency (Regional Agency for Innovation and Productive Development), *Innova Bío Bío*, a co-operative venture between the Production Development Corporation (CORFO) and the regional government which was used as a model for the creation of the national agency *Innova Chile*. In addition, Chile's first regional council for science and technology *CORECYT*, was established in the Bío Bío Region. Recently, the region has also taken steps to mobilise the leading higher education institutions for its development through "Bío Bío Educates and Innovates" programme. Significant investments have been made to enhance universities' role in innovation.

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***... its higher education sector is above national standards in terms of innovative capacity...***

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Today, the Bío Bío Region is the second region in Chile in terms of R&D on the basis of a number of indicators such as funding, staffing and publications or patents. The research scene is heavily dominated by the University of Concepción, while other institutions are strengthening their capacity from a low base. In terms of knowledge generation, the Bío Bío Region produced in 2008 a greater proportion of published papers than would be predicted by its share of national population (13.1% versus 12%). The rate of production in the region has grown significantly faster than the national average over the past two decades. With respect to patents, the Bío Bío Region over performs, thanks to the University of Concepción, the country's top higher education institution for patent production: In 1995-2007 the region accounted for 29% of all patents from universities across the country. There are 24 active research centres based at higher education institutions, involving five different institutions. The region, mainly through the University of Concepción, is also represented in six of 19 recognised innovation consortia. Specific centres are devoted to regional priorities, such as fisheries and forestry, with growing ties with the industry sector. The region has a significant percentage of Chile's PhD programmes, enrolment and PhD-holding faculty. The University of Concepción has an Office for Technology Development in place since 1996. Universidad del Desarrollo maintains an active Centre for Innovation and the Promotion of Entrepreneurship.

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***...but so far their focus has been on knowledge production rather than on knowledge transfer...***

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However, the overall capacity to absorb technological innovation is low in the Bío Bío Region. Much of the research carried out in the higher education institutions in the region is destined for transferral to other more technologically advanced regions, due to the structure of the regional economy. There is a gap between the higher education sector and market needs. Particularly, the linkages between higher education institutions and small and medium sized enterprises (SMEs) need to be strengthened, for example through the establishment of a single entry point for the SMEs within a group of higher education institutions or the development of sector based approaches to address the needs of the SMEs. Currently, SMEs have limited information about the capability of higher education institutions to assist them and higher education institutions lack the information, resources and data bases to respond in a sensitive and timely manner. There is some support to new business formation in the form of incubators, but limited collaboration across higher education institutions.

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***...furthermore, there is a large public role in the Bío Bío Regional Innovation System that can influence entrepreneurship attitudes...***

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The Bío Bío Region is investing in the order of tens of millions of US dollars per year in innovation with the expectation that this investment will pay back through the generation of increased private sector activity. There is a need to foster a sense of greater responsibility to show an overall positive return to the public investment. There is also a risk that the large public role in the regional innovation system may lead to the funding of innovations which are commercially not viable or that the publicly-driven innovation system undercuts its own goals of developing entrepreneurship.

***The following measures would promote regional innovation in the Bío Bío Region***

- The strong public presence in the innovation model should be recognised and its potential deficiencies should be reviewed. Innovation authorities should take explicit actions to diminish potential negative consequences of the large role of public agencies as direct service providers, i.e. funders of innovation, and ensure

that this presence does not discourage the emergence of private sector actors.

- Concern to monitor the rate of return on public investments should be increased, for its own sake and as a means of encouraging high calibre entrepreneurship and competitiveness.
- The balance between key informant data and more neutral statistical measures of innovation performance should be revisited as it affects policymaking. Key informant information should in all cases be complemented with views from outside the region, and selection and other tendencies toward biases should be mitigated.
- A wider portfolio of data related to the characteristics and performance of firms should be developed in conjunction with the promotion of cluster-building strategies and evidence based decision making in general.
- Efforts to unify the main goals for innovation in the region in the short-to-medium-term should seek to identify a central focus. Innovation authorities should guard against pursuing too many goals simultaneously and/or dispersing energy and efforts.
- The incentives for higher education institutions should be continuously reviewed to find ways of influencing these toward more concrete participation in innovation activities and move from knowledge production to knowledge transfer and to perceive job creation as one of the goals of innovation.
- Higher education institutions should step up their innovation and knowledge transfer activities and share good practices among themselves in a systematic manner. Furthermore universities should learn from good examples provided by the leading technical training centres, professional institutes and private institutions to improve labour market relevance of their learning programmes.
- Co-operation among private sector businesses, public administration, regional development agencies and higher education institutions should be expanded. Three courses of action could be followed: i) address the needs of local enterprises that are capable of exploiting research results; ii) encourage local industry to diversify in activities in promising new fields; and iii) focus on sector-based cluster development in order to approach the small and medium sized enterprises (SMEs). In addition, establishing single entry points for SMEs within a single higher education institution or a group of institutions should be encouraged.

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## Social, cultural and environmental development in the Bío Bío Region

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*The challenges in the Bío Bío Region are manifold, ranging from poverty and indigence, ethnic diversity, environmental degradation and urban-rural divide...*

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The social conditions in the Bío Bío Region have improved considerably in the last two decades. Still, in a national comparison, it is one of the regions with the highest proportion of poor (20.7% versus 13.7%) and indigent (5.2% versus 3.2%) families. Several municipalities in the region count among the poorest in the country, although their situation has improved over recent years. The Bío Bío Region is also culturally diverse. Of the total regional population 7.8% declare to belong to one of the eight officially recognised ethnic groups, most importantly the Mapuche population who have recently enforced their campaign to regain land and stand in conflict with the energy and forestry companies. Furthermore, economic growth has led to increasing pressures on the environment.

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*...higher education institutions see widening access as their key contribution to regional development. They also provide a wide range of services in the health and social sector.*

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The higher education institutions in the Bío Bío Region see widening access and increasing participation of students from lower socio-economic backgrounds as their key social contribution to regional development. They have been instrumental in the increased access of the lower income quintiles to higher education. Supported by the Ministry of Education, higher education institutions have each developed their own projects and approaches to collaborate with the schools to raise aspirations and improve learning outcomes among students and to improve management of these institutions. Higher education institutions also provide a wide range of services to different communities, usually in the health and social sector. Valuable work is carried out, not the least in rural areas where many higher education institutions reach out to the low income population segments in particular. Most initiatives are based on social innovation and address sector-specific issues, but they lack a more integrated approach to local economic and social development in the region. Furthermore, much of this outreach, for example by San Sebastián University, is conducted by students through internships which are in general not credit bearing. In addition,

while widening access will contribute to outmigration if the best and brightest leave the region to find work opportunities elsewhere, and service delivery will address the symptoms of poverty and indigence, but not the causes, there is a need to develop more sustainable ways to collaborate with the “harder to reach” communities.

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*... there is a need to reach out and empower communities to address their own challenges by strengthening the social economy, cultural identity and environmental development...*

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Community development programmes aim to build capacity by enabling communities to respond to change and emerging social, economic and environmental challenges. The Universidad Católica de la Santísima Concepción has taken on an important role in supporting sustainable community development in the two rural areas of Coronel and Arauco. In Coronel, the university supports the local communities to move away from capture fisheries to aquaculture. In Arauco, the university has launched the Agricultural Technology Transfer Centre to support sustainable economic development of the Mapuche population. In addition, some institutions, for example the University of Bío Bío, provide significant contributions to local development by bringing in the training and the knowledge required for the definition and implementation of regional strategies. However, higher education institutions, in collaboration with local and regional authorities, could also play a more prominent role in training community development practitioners, providing lifelong learning and re-skilling and up-skilling opportunities, conducting research into specific issues and best practices and developing co-operation and research opportunities. There is also considerable underused potential in environmental and cultural development as well as international collaboration beyond Spanish speaking regions.

***The following measures would enhance the contribution of higher education institutions to the social, cultural and environmental development in the Bío Bío Region:***

- A systematic exchange of information and experience should be put in place between higher education institutions in social, cultural and environmental matters facilitated by the regional government in order to bring greater efficiency. Such a forum could organise thematic events, with regular information retrieval and exchange facilitated by a dedicated website. As a first step, higher education institutions’ current connections, initiatives and projects involving

stakeholder collaboration, community development and/or outreach should be mapped and published in the collaboration platform.

- In addition to widening access and providing services to various communities, higher education institutions should engage in long-term community development seeking ways to empower communities to find their own solutions to various economic, social, cultural, environmental challenges which are global, national and local in nature. They should consider ways to move away from combating poverty to fostering wealth and job creation through social entrepreneurship. The region should be seen as a “laboratory” for developing research, students’ work-based and experiential learning and development projects in many different fields.
- The region should, in collaboration with the higher education institutions and other stakeholders, develop a strategy that sees arts and culture as an agent of development through: i) direct benefit in enhancing the quality of life of the diverse population; ii) indirect economic benefits in attracting and retaining talent which can drive the knowledge society, and iii) a direct contribution to the creative industries through enterprise formation, growth, productivity and employment. This strategy should address the needs of the diverse populations in the region and enhance the internationalisation of the region.
- The region should, in collaboration with higher education institutions and public and private sector increase efforts to support sustainable environmental and economic development through a comprehensive strategy bringing together diverse regional actors to sustainability process. Higher education institutions should scale up their efforts to provide learning and further education programmes in sustainable development; to act as a source of expertise through research, consultancy and demonstration; to demonstrate good practice through campus waste management and development activities, strategic planning, building design, waste minimisation and water and energy efficiency practice, responsible purchasing programmes and good citizen type initiatives like “Green Campus”.

## **Regional capacity building**

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### ***The Bío Bío Region has pioneered in building capacity for regional engagement...***

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Traditions of partnerships within the region between higher education institutions, businesses, regional agencies and government bodies, acting in concert with each other, is a critical factor in attracting foreign direct investment and partnering with other regions and higher education institutions globally. The Bío Bío Region has been a national leader in building capacity in regional development and innovation. *Innova Bío Bío* and CORECYT have contributed to regional growth within the regional development strategy and the regional agenda has interpreted territorial strategies with participation of higher education institutions. The higher education institutions in the Bío Bío Region as well as students and staff engage in wide ranging collaboration including knowledge transfer, collaborative efforts with business and industry, community outreach and volunteering. There is evidence of innovative programmes and projects, strong civic leadership and increasing collaboration of higher education institutions in regional development.

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### ***... but collaboration remains a challenge as limited resources are spread thin and there is often a lack of critical mass to generate projects which will have real impact at the local and regional level and create multiplier effects...***

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While there is an abundance of initiatives and projects and evidence of excellence, the work is often project-based and/or driven by the action on the initiative of individuals or single departments. Collaborative mechanisms among higher education institutions to build capacity and foster joint efforts for regional development remain limited in scope and representation. In spite of broader initiatives such as the Programmes for Improvement of Competitiveness (most notably PMC on “Bío Bío Educates and Innovates”), the picture of the diverse programmes and projects with participation of higher education institutions is one of fragmentation built on generally separate and non-coordinated initiatives stemming more from specific circumstances than an overarching vision of needs and possible converging efforts. New promising initiatives include the establishment of a health cluster in the region in collaboration between the University of Concepción, Universidad Católica de la Santísima Concepción and San Sebastián University. This initiative holds much promise for regional

development and the region's low income population but care should be taken to ensure that all relevant accredited higher education institutions, for example the Universidad del Desarrollo and University of Bío Bío, have the opportunity to participate in the collaboration.

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***... and incentives to mobilise higher education institutions and their staff for regional and local development remain limited...***

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Higher education institution's culture, capacity for change, leadership and the appropriate co-ordination mechanisms and oversight regionally play an important role in their capacity to engage with partnership building and collaborative action. In Chile, the incentive structures for mobilising higher education institutions for regional and city development are limited. There is no explicit third task or regional development task assigned to higher education institutions and regional engagement is left to the initiative of the individual institutions. In terms of institutional management, Chile's public universities give a major role in institutional decision-making to academic staff, but very little influence is given to external partners. Higher education institutions should be encouraged to build their capacity, allowing them to recruit rectors from outside the university and to encourage them to adopt modern management practices and free them from cumbersome civil service controls and regulations.

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***... some national level initiatives help reform higher education and could also have stronger impact on regional development...***

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The Government of Chile has taken steps to reform higher education. MECESUP (Programme for the Quality and Equity Improvement of Higher Education) was launched by the Chilean Ministry of Education in collaboration with the World Bank. It is a national top-down initiative involving the central government's thrust to improve the quality of higher education. The 18% cap of funding for a single institution has guaranteed that 70% of the funds have been directed to higher education institutions outside of Santiago and that higher education institutions outside the national capital also benefit from the programme. The recent efforts to involve also institutions outside of the traditional universities in some activities are commendable. Of particular interest are the performance agreements which require institutional improvement plans and enhance accountability and transparency. Ensuring that the critical reform initiatives are scaled up throughout the system is part of the challenge facing the

Government of Chile. To improve management capacity, transparency and accountability across the higher education sector, the performance based agreements should be made available to all accredited higher education institutions.

While it was outside the scope of the review to assess the Chilean higher education funding system, the Chilean government should take steps, in line of the recommendations of the recent OECD/World Bank review of tertiary education in Chile (2009) to address the considerable financial burden that the education system currently places on students and their families as well as the fact that public funding for higher education is not available for all accredited institutions.

***The following measures would build capacity for regional development:***

- Chile should continue and deepen the decentralisation process and enhance capacity building in its regions. Experience in OECD countries shows that increased decision-making power at sub-national levels of government combined with adequate co-ordination mechanisms can unleash the potential in the regions. As regional capacities are built through “learning by doing”, increased responsibilities at the regional level are necessary to build skills and develop problem solving approaches.
- Regional and local engagement and more specifically its wide agenda for economic, social and cultural development should be made explicit in higher education legislation. Regional engagement should be encouraged through strengthening the National Commission of Accreditation Process. In addition, performance agreements should be made available to all accredited higher education institutions.
- Incentives for higher education institutions should be created to engage in local and regional development through long term core funding and additional strategic incentive-based funding schemes. In addition, local and regional engagement of higher education staff should be acknowledged and rewarded by higher education institutions in their recruitment, hiring and reward systems.
- Evidence-based decision making should be strengthened in the region by focusing on a dashboard of key indicators that the key regional stakeholders can monitor over time. This can result in a shared local knowledge base which will galvanise the development of a strong local strategy for change.

- The capacity for regional engagement should be improved in the region among key agencies and higher education institutions through forums for communication where good practices can be fostered and through targeted training programmes with focus on practical problem solving.
- The joint resources of the higher education institutions should be mobilised for the preparation and implementation of regional strategies.
- A regional strategy platform should be developed to complement the current project-based approaches with a more system-based approach.
- Higher education institutions should establish modern administration with human resources and financial resources management systems. In addition, they should review recruitment, hiring and reward systems to include regional development agenda.

## **OECD reviews of higher education in regional and city development**

Universities and other higher education institutions can play a key role in human capital development and innovation systems in their cities and regions. In the context of global economic and financial crisis, OECD countries are seeking to mobilise higher education institutions (HEIs) to support more strongly their economic, social and cultural development.

In 2008, the OECD/IMHE launched a second series of OECD Reviews of Higher Education in Regional and City Development to address the demand by national and regional governments for more responsive and proactive higher education institutions. As a result, 14 regions in 11 countries have undergone the OECD review process in 2008-10.

This joint OECD and World Bank Review of Higher Education in Regional Development of the Bío Bío region in Chile (<http://www.oecd.org/dataoecd/50/5/46340678.pdf>) explores a range of policy measures and institutional reforms to mobilise higher education for the development of the region. It is part of the series of the OECD reviews of Higher Education in Regional and City Development. The reviews analyse how the higher education system impacts local and regional development and help how this impact can be improved. In addition to human capital and skills development, technology transfer and business innovation, the reviews also considers higher education's contribution to social, cultural and environmental development and regional capacity building.

To know more about the OECD review process and requirements, visit Higher Education and Regions' website at

[www.oecd.org/edu/imhe/regionaldevelopment](http://www.oecd.org/edu/imhe/regionaldevelopment).