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United Nations
Educational, Scientific and
Cultural Organization

UNESCO Jakarta
Asia and the Pacific Regional Science Bureau

The Regional Bureau's Science Support Strategy 2010–2013

Meeting Society's Needs with Science-based Solutions

Contents

FOREWORD

The role of science, technology and innovation in achieving sustainable development cannot be overemphasized. Never before in the history of mankind has our planet been subjected to such rapid and profound changes. Climate change, rapid urbanization, population growth, the emerging freshwater crisis and increasing risk of natural disasters are just some of the challenges we need to address if we are to secure the future of our planet. We need to give true meaning to the term "Sustainable development" if we are to provide for the needs of the rapidly expanding population, all sharing the limited resources available. With about 60% of the world population, this is particularly urgent for the Asia and the Pacific region, which also has between 60-70% of all people targeted under the internationally agreed development goals, including the MDGs. In my opinion these development goals can not be achieved by simply upscaling – by a 'more of the same' approach. In other words, the internationally agreed development agenda calls for more creativity and innovation - a key role for science and technology. However, the role of science, technology and innovation in MDG achievement is currently not yet fully exploited and needs more attention. This calls for a new approach that builds on innovation, cooperation, and policies that promote sustainability. UNESCO, with its broad mandate, is positioned well to assist in such new regional approach for change in Asia and the Pacific.

The Science Support Strategy for Asia and the Pacific aims at the development and implementation of a focused and coherent science programme, which addresses priority problems and challenges in the region. This Science Support Strategy builds on the Organization's Medium Term Strategy, while tailoring the Strategic Programme Objectives further to suit the specific challenges and priorities for the Asia-Pacific region. Strategy is also about making choices, and therefore we will focus our efforts on four main Strategic Themes:

- Water for People and the Environment
- Climate Change and Environmental Resources
- Science Policy and Science Education
- Disaster Preparedness and Mitigation

Corresponding to these Themes, the Science Support Strategy identifies four Regional Flagship Programmes, which are heavily rooted in the Natural Sciences domain, but require inter-sectoral cooperation to generate maximum impact and benefits. Under this Science Support Strategy, the UNESCO Office Jakarta will strive to achieve excellence in knowledge-based assistance, delivering more aid more effectively with greater results and impact contributing to its aim of benefiting the cluster and regional member states covered by the office.

During the coming years, we aim to build on our past performance, seeking particularly to support the development of a strong regional science programme and the strengthening of UNESCO's science mandate in joint UN programmes for member states in the Asia and the Pacific region.

In closing, I would like to invite all existing and new partners to join us to provide their valuable support and team work to effectively implement this Science Support Strategy.

Hubert Gijzen, Ph.D
Director and Representative
Regional Science Bureau for Asia and the Pacific

Science for Sustainable Development

DEVELOPMENT CHALLENGES AND OPPORTUNITIES IN THE REGION

In the Asia-Pacific region, with nearly four billion people or over 60% of the global community, the global challenges stemming from trends in globalization, demographic growth, resource scarcity, climate change, environmental resource destruction, socioeconomic inequalities and political instability, are a matter of urgency. Though the region has achieved strong economic growth over the last two decades and made more progress than many other regions towards achieving the Internationally Agreed Development Goals (IADGs), including the Millennium Development Goals (MDGs), large socioeconomic and development gaps still need to be addressed. The region remains home to two-thirds of the world's poor and hungry, with over 950 million people living under the $1.25 per day poverty line.

Within the region, development in Southeast Asia, which has already achieved nine of the 21 assessed MDG indicators and is on track for another three, is well ahead of South Asia and the Pacific Islands. At present, fourteen Asian and Pacific States[1] are still listed as Least Developed Countries (LCD), with the majority in South Asia and the Pacific. But national disparities are also appearing, especially in new middle income countries. With the rise of modern economies in China, India and many ASEAN states, projections point to distinct socioeconomic classes with great differences in financial and social access, services and opportunities.

In the Asia-Pacific context, size does matter. The sheer numbers translate into huge challenges. It is estimated that the region comprises over 60,000 islands, more than all other regions on this planet combined, making outreach and connectivity a daunting task. Furthermore, due to its large population, the region has also the greatest numbers of people affected by development issues on this planet. With a figure of some 1.9 billion, the region encompasses more than 70% of the developing world's people who are affected by inadequate sanitation. And while the Asia-Pacific region has been an early achiever in reaching the clean water target of the MDGs, some 469 million people, or more than the total population of the USA, Canada and Mexico combined, are still deprived of access. The recent economic crisis has slowed down economic growth and intensified the challenge of achieving the MDG targets. Without additional resources the number of people estimated to be in deprivation by 2015 will be higher than originally predicted.

Another example of the complexity of the development challenges in the Asia-Pacific region is the region's vulnerability to hazards and their impacts. More than 50% of the severe natural disasters on this planet occur in the Asia-Pacific region. Typhoons, tsunamis, floods, droughts and fires have often severe sub-regional or even regional impacts. Forest

[1] Afghanistan, Bangladesh, Bhutan, Cambodia, Lao's People Democratic Republic, Kiribati, Maldives, Myanmar, Nepal, Samoa, Solomon Islands, Timor Leste, Tuvalu, Vanuatu.

fires in Indonesia can cause negative health hazards in neighbouring countries. Droughts in Vietnam and related harvest failure can cause a regional food crisis. Floods in Pakistan can cause increasing security concerns far beyond its borders. With emerging challenges such as climate change, pollution, population growth and environmental degradation, hazards are expected to become more severe and frequent, and threaten to trigger widespread devastation in the Asia-Pacific region in the coming decades. Such events will reduce national and regional resilience capacities and increase the risk of long-lasting negative impacts on the achievement of the MDGs and other development objectives.

Since both existing and emerging development challenges are strongly interlinked and interdependent across spatial, temporal and sectoral scales, the solutions to overcome these problems must be too. The achievement of a more inclusive, equitable, green and sustainable development path requires the presence of knowledge-based societies with the ability to develop and use demand-driven interdisciplinary and scientifically sound strategies and interventions that cut across sectors and regions, sub-regions, and nations.

This Regional Science Support Strategy 2010-2013 emphasizes the need to better understand these complex relationships and to approach them in a holistic way in order to provide concrete, workable, and context-appropriate solutions to improve people's lives.

THE ROLE OF SCIENCE, TECHNOLOGY AND INNOVATION

The importance of science in addressing global development issues has been recognized and highlighted in many international conferences and reports such as the Declaration on Science and the Use of Scientific Knowledge[3] and the Declaration on International Science and Technology Cooperation for Sustainable Development[4]. At the Asia-Pacific level, the Ministers of Science and Technology under the Asia-Pacific Economic Cooperation (APEC) have issued a number of declarations and joint communiqués in support of enhancing the capacity of science, technology and innovation to deliver sustainable growth across the APEC region.

Within the context of these declarations as well as the complex problems humanity is facing in the 21st century, UNESCO is actively spearheading and promoting science, technology and innovation as a solution to achieving sustainable development. But UNESCO's approach goes beyond research and applications on integrating environmental considerations into socioeconomic development, encompassing issues such as human dynamics, social changes, economic needs and cultural diversity.

The current issues faced by a majority of people on earth, such as food security, poverty, environmental degradation, water crisis, desertification and climate change, can only be solved through innovative and responsible scientific and technological interventions. However, while we need to stimulate advances in science and technology for the benefit of humankind, we must also try to minimize negative spin-offs by controlling the ethical, safety and environmental issues resulting from their application.

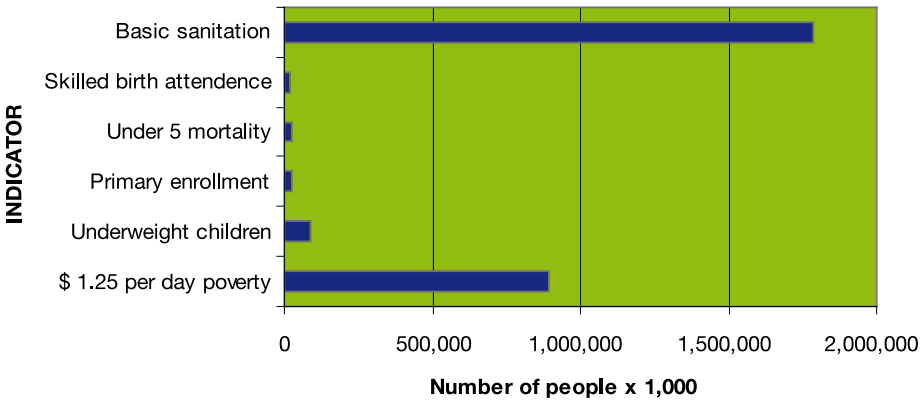
In that respect we must learn from the past. The world has gone through a number of scientific and technological revolutions, which have marked the development of humankind, such as the industrial revolution, the medical revolution, the green revolution and the current ICT revolution.

[2] Table based on information from Asia-Pacific MDG Report 2010/11(ESCAP/ADB/UNDP).

[3] Adopted at the UNESCO World Conference on Science, Budapest, 1999.

[4] Adopted at the Organization for Economic Co-operation and Development (OECD) Meeting on Science, Technology and Innovation for the 21st Century.

Figure 1. Predicted Affected Population in Asia-Pacific in 2015 on Current MDGs Trend [2]



Scientific innovations have been the driving force for industrial development and economic growth, for rooting out diseases such as smallpox and for increasing the agricultural production to fight hunger, thereby contributing to the quality of life for billions of people. Over the last centuries, science, technology and innovation were aimed at meeting the needs of a growing and consumerist human population without always understanding or prioritising the fragile relationship between people and ecosystems, and the essential life-support systems of planet earth. It is clear that the past economic development model, which has led to severe pollution of air, soil and water, the degradation of environmental resources and to global climate change impacts, can not be continued as such. While certain scientific and technological innovations might be co-responsible for current development problems the planet faces, science and technology are also very much at the core of the solutions. In order to address the complexity of development issues it is important to mobilise science to address the needs of the most vulnerable of our society. Science, Technology and Innovation play a key role in addressing the current issues faced by a majority of people on earth, such as food security, poverty, environmental degradation, water crisis, desertification and climate change.

To develop and use science, technology and innovation for sustainable development, we also need to overcome the limitations of the current compartmentalized and disciplinary approaches in science. More effort will also be needed to ensure that all nations, developed and developing, and all layers of society are supporting the exchange and accessibility of science and technology information. Science should also be an integral part of policymaking processes for the benefit of the vulnerable. An enhanced dialogue between scientists, policy makers and the vulnerable groups in society will result in pro-poor science and pro-poor policies.

Many countries in the region are currently witnessing a worrying declining trend in university enrolment figures for science and technology-related subjects. With the regional and national challenges ahead in terms of sustainable development, countries must consider how to build a strong science and technology base, including the human resource capacity to address these challenges. The OECD recommends to spend at least 3% of the GDP on research and development (R&D). This figure, however, is met only by very few countries today. In most developing nations in the Asia-Pacific region the allocation of resources for R&D is particularly low. This needs to be given more attention via Science, Technology and Innovation policy advise, and by making science more relevant to broader societal needs, including through south-south and north-south-south cooperation.

THE ROLE OF THE REGIONAL SCIENCE BUREAU

As a specialized agency of the United Nations, UNESCO works to create the conditions for

dialogue among civilizations, cultures and peoples, based upon respect for commonly shared values. The goals for which UNESCO was established in 1945 are still very relevant to the current global development context. The vision articulated in the preamble of the Constitution to 'construct the defences of peace in the minds of men' is perhaps more important today than ever. In a world of growing socioeconomic disparities, UNESCO is building bridges between all parts of society, and developing and deepening mutual understanding, reconciliation and dialogue through addressing global challenges of humanity.

Over the last decade, UNESCO has enforced a strong decentralization policy to ensure that its programmes, although global in scope, are effective, needs-based and fully adjusted to the socioeconomic, cultural and political context of its Member States.

The UNESCO Office, Jakarta, serves both as the **Regional Science Bureau for Asia** and the Pacific and as a **Cluster Office** covering all major UNESCO programmes and mandates for Brunei Darussalam, Indonesia, Malaysia, the Philippines, and Timor Leste.

As the Regional Science Bureau for Asia and the Pacific, the Office serves 47 countries[5] in the region in the field of Earth and Environmental Sciences, Freshwater, Oceans, Basic and Engineering Sciences, Coastal Regions and Small Islands, and Disaster Risk Reduction and Preparedness. The Bureau represents and implements the regional components of UNESCO's intergovernmental scientific programmes[6], which cover a wide array of sciences and play an important role in the enhancement of sciences in society in the region.

As the Regional Science Bureau, the Office also provides support and guidance to 14 UNESCO cluster and national offices in the region[7]. In close cooperation with these field offices, the Bureau develops regional strategies and policies and coordinates and implements activities and interventions. The Bureau also collaborates closely with the Bangkok Regional Bureau for Education to ensure synergies and cross-sectoral approaches between all major UNESCO Programmes, notably in the field of Education for Sustainable Development (ESD).

Using its unique combination of knowledge, partnerships, and practical experience and fulfilling the main UNESCO functions of a laboratory of ideas, a standard setter, a clearing house, a capacity builder, and a catalyst for international cooperation at regional level, the Bureau works with and builds capacity of Member State governments, inter-governmental organizations, UN agencies, research institutions, civil society organizations (CSO), and communities to effectively address challenges, aspirations and needs in the Asia-Pacific region. Moreover, the Bureau's strong collaboration with the UNESCO National Commissions has translated into stronger presence and interventions at the sub-regional and national levels to better target and deliver programmes that address Member States' priorities.

[5] Afghanistan, Australia, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, Cook Islands, Democratic People's Republic of Korea, Federated States of Micronesia, Fiji, India, Indonesia, Islamic Republic of Iran, Japan, Kazakhstan, Kiribati, Kyrgyzstan, Lao People's Democratic Republic, Malaysia, Maldives, Marshall Islands, Mongolia, Myanmar, Nauru, Nepal, New Zealand, Niue, Pakistan, Palau, Papua New Guinea, Philippines, Republic of Korea, Samoa, Singapore, Solomon Islands, Sri Lanka, Tajikistan, Thailand, Timor Leste, Tokelau, Tonga, Tuvalu, Turkmenistan, Uzbekistan, Vanuatu, Vietnam.

[6] The International Hydrological Programme (IHP), Man and the Biosphere Programme (MAB), the International Geoscience Programme (IGCP), the Intergovernmental Oceanic Commission (IOC) and the International Basic Science Programme (IBSP).

[7] Almaty (Cluster Office), Apia (Cluster Office), Bangkok (Cluster and Regional Bureau for Education), Beijing (Cluster Office), Dhaka (National Office), Hanoi (National Office), Islamabad (National Office), Kabul (National Office), Kathmandu (National Office), New Delhi (Cluster Office), Phnom Penh (National Office), Tashkent (National Office), Tehran (Cluster Office) .

Vision and Mission

MEETING SOCIETY'S NEEDS WITH SCIENCE-BASED SOLUTIONS

UNESCO is uniquely positioned within the UN family to be the primary advocate and key player for promoting and using scientific knowledge in support of the wider sustainable development agenda, as reflected in the Internationally Agreed Development Goals (IADGs), including the MDGs.

By fostering dialogue, cooperation, networking, capacity building and knowledge-sharing with the scientific community, decision makers, and civil society in the Asia-Pacific region as well as at country level, the UNESCO Regional Science Bureau for Asia and the Pacific will contribute to the ultimate Vision where member states will be able to **'Meet Society's needs via science-based solutions'.**

MISSION

In carrying out its global mandate, UNESCO seeks to strengthen the mutually supporting pillars of peace, sustainable development and human rights, contributing to poverty eradication and promoting the dialogue among civilizations and cultures. The following mission statement captures UNESCO's strategic orientation:

In line with the overall UNESCO mission and in support of its vision to 'Meet Society's needs via science-based solutions', the Bureau will carry out the following mission:

- To support Member States in the Asia-Pacific region in developing and strengthening their national science, technology and innovation systems and capacity;
- To mobilize science, technology and innovation to enable Member States in the region to attain sustainable development, and to reduce impacts from global change pressures.

As a specialized agency of the United Nations, UNESCO contributes to the building of peace, the eradication of poverty, sustainable development and intercultural dialogue through education, the sciences, culture, communication and information.

Strategic Directions

The overarching question is:
How can the Regional Science Bureau position itself to address the challenges faced by Asia and the Pacific in the 21st century, while maximizing the benefits from prospective opportunities?

RATIONALE

UNESCO Jakarta's Regional Science Support Strategy is aimed at the development and implementation of a focused and coherent science programme across the Asia-Pacific region, which defines and addresses challenges, opportunities, and needs in the region, and provides a framework for tailored and demand-driven interventions.

Among UNESCO's primary tools for fostering science and technology in the region are the intergovernmental programmes in basic sciences (IBSP), ecology (MAB), geology (IGCP), hydrology (IHP), and oceanography (IOC).

These programmes not only provide a framework for cooperation but also promote and enable the development of international and regional networks. Bringing people and knowledge-producing institutions together to solve problems on emerging diseases, floods, climate change, and an array of other issues is vital for the future of the region.

Addressing the complex and emerging problems humanity is facing in the 21st century with single interventions through sectoral approaches is unlikely to have lasting positive outcomes. The Bureau will therefore focus on a series of interventions that will be realized through a multisectoral approach while emphasising two of UNESCO's global priorities—Least Developed Countries (LDC) and Small Island States (SIDS)—and will be closely aligned with the principles of the UN Decade on Education for Sustainable Development (DESD).

LINK WITH UNESCO'S MEDIUM-TERM STRATEGY

Every six years, UNESCO adopts a Medium-term strategy that sets out the strategic objectives, programmatic framework and expected outcomes for the Organization's work in all its domains at the global, regional and country levels. The current Medium-term strategy (2008-2013) is structured around five programme-driven Overarching Objectives that define areas where UNESCO has a unique profile and a comparative advantage.

Under the Overarching Objective for the science sector, 'Mobilizing scientific knowledge and

science policy for sustainable development', UNESCO has defined three Strategic Programme Objectives:

1.	Leveraging scientific knowledge for the benefit of the environment and the management of natural resources;
2.	Fostering policies and capacity building in science, technology and innovation;
3.	Contributing to disaster preparedness and mitigation.

The Bureau's vision and mission for the Asia-Pacific region represents the translation of the Overarching Science Objective and these Strategic Programme Objectives into a regional context. To contribute to the achievement of these Objectives, the Bureau has identified four Strategic Themes based on the regional challenges, priorities and needs:

- Water for People and the Environment
- Climate Change and Environmental Resources
- Science Policy and Science Education
- Disaster Preparedness and Mitigation

These Strategic Themes provide a strong framework as well as a necessary bridge between UNESCO's global Medium-term strategy and the regional challenges and priorities. The Strategic Themes allow the Bureau to focus its programmes and resources on the major development challenges faced by the Asia-Pacific region while contributing to the achievements of the Global Strategic Programme Objectives.

REGIONAL FLAGSHIP PROGRAMMES

In order to make the Strategic Themes operational within the region, the Bureau has further identified four Regional Flagship Programmes. Despite being heavily rooted in the Natural Sciences domain, the Flagship Programmes will require intersectoral cooperation to generate maximum impact and benefits. The Flagship Programmes are:

SWITCH-*in-Asia*:
Sustainable Water Management Improves Tomorrow's City's Health in Asia;

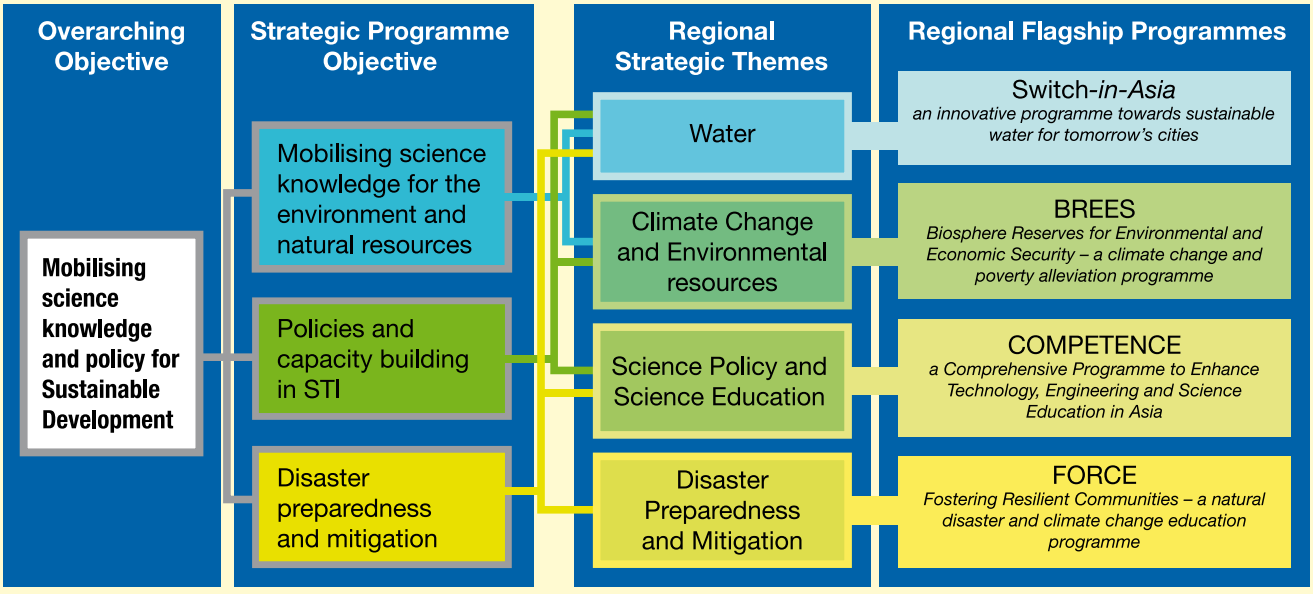
BREES:
Biosphere Reserves for Environmental and Economic Security – a climate change and poverty alleviation programme;

COMPETENCE:
a Comprehensive Programme to Enhance Technology, Engineering and Science Education in Asia; and

FORCE:
Fostering Safer and Resilient Communities – a natural disaster and climate change education programme.

Besides encompassing the major UNESCO science programmes, the Flagship Programmes will also incorporate a number of emerging science areas, such as biotechnology, nanotechnology, renewable energy, climate change, and indigenous and local knowledge systems. The Programmes

Linking Global and Regional Medium Term Strategic Objectives

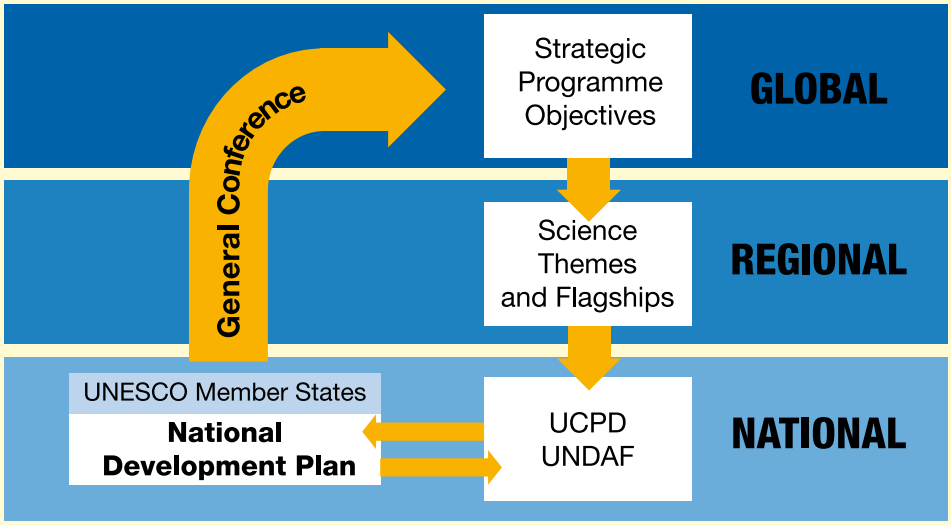


also aim to build capacity in the sciences and technology to address the main sustainable development issues in the region.

Though the Flagship Programmes have a regional approach, UNESCO Country Programme Documents (UCPD) and United Nations Development Assistance Frameworks (UNDAF) will provide the country-specific and needs-based context for adapting the Flagship Programmes at national level. The country-based interventions will be linked at the regional level to establish regional 'Learning Alliances', which will help to mobilize regional expertise, foster the exchange of results and best practices, and establish effective south-south and south-south-north collaboration. The Flagship Programmes also seek better alignment of work done by other UNESCO field offices in the Asia-Pacific region, UNESCO Cat II centres and other partners, to ensure greater effectiveness and impact of programme delivery.

The Bureau will also engage in a number of other, equally important initiatives, which are closely interlinked to the Flagship Programmes, such as issues of ethics in science and technology, and supporting the development and implementation of Science, Technology and Innovation policies at local, national, regional level.

Linking Global, Regional and National Levels



SWITCH-*in-Asia*

SUSTAINABLE WATER MANAGEMENT IMPROVES TOMORROW'S CITY'S HEALTH IN ASIA

Background: The Asia-Pacific region's share of the global urban population has risen from 9% in 1920 to 48% in 2000, and is expected to rise to 53% by 2030. Rapidly growing cities exert a tremendous amount of stress on the environment and society, creating major challenges in water use, waste disposal, and water pollution. These, in turn, have serious negative social and economic consequences. SWITCH-*in-Asia* aims to bring about a paradigm shift in urban water management away from existing ad hoc solutions to urban water management and towards a coherent and integrated sustainable approach.

Our Goal: To develop, apply and demonstrate a range of tested scientific, technological and socioeconomic solutions and approaches that contribute to the development of effective and sustainable urban water management (UWM) schemes in Asian Cities.

Outcomes:

- Positive change in urban water management practices and reduction of water-related vulnerabilities, including flooding incidence and the related social and public health impacts;
- 'Water supply for all' and improved service provision by protecting water resources through reduction of pollution;
- Greater access to and use of new UWM technologies (e.g., storm-water source control, eco-hydrology concepts, advanced ecological sanitation, soil-aquifer-treatment systems) to support environmental and socioeconomic sustainability;
- Generate economic benefits by replacing expensive drinking water with rainwater and/or untreated wastewater for (urban) agriculture and forestry, industry and household uses, and through the productive use of energy and nutrients recovered from wastewater.
- Greater knowledge and awareness via capacity building, training and 'Green School'/ESD programmes.

FLAGSHIP Programmes

BREES

BIOSPHERE RESERVES FOR ENVIRONMENTAL AND ECONOMIC SECURITY – A CLIMATE CHANGE AND POVERTY ALLEVIATION PROGRAMME

Background: The Asia-Pacific region is home to two-thirds of the world's poor. The rural poor have traditionally been economically and socially ignored, under-represented, and underserved. However, they now have an economic and social stake in making sustainable development work. Climate change will be the most important challenge that this planet faces in the 21st century and beyond. Human activity emits 32 billion tons of CO_2 each year globally, of which 15 billion tons stays in the atmosphere and contributes to climate change, while 17 billion tons are dissolved into the oceans and drawn in by tropical forests. The wise management of forest, coastal, and marine ecosystems by the rural poor will be critical in ensuring the future survival of these important ecosystems, including the communities that live in them.

Our Goal: To strengthen and promote the role of biosphere reserves in achieving environmental and economic security throughout Asia and the Pacific.

Outcomes:

- Maintenance of large intact natural areas that represent significant carbon sinks, maintenance of environmental services, and promotion of eco-friendly ventures and projects;
- Achievement of inclusive economic growth and reduction of poverty of targeted vulnerable clients and communities;
- Strong social fabric of society.

COMPETENCE

COMPREHENSIVE PROGRAMME TO ENHANCE TECHNOLOGY, ENGINEERING AND SCIENCE EDUCATION IN ASIA

Background: Advances in science and technology, based on a strong science education foundation, must be the vehicle by which countries can begin to solve development challenges such as climate change, disaster risk reduction, and pandemics. In recent years, however, we have witnessed a troubling trend in the Asia-Pacific region—a diminishing interest in science and technology and in pursuing science-related careers. As a result, we have seen low quality science education, limited resources devoted to science and technology among some countries, deterioration of scientific and technological literacy in the region, and a loss of competiveness in the field of science and technology.

Our Goal: To engage youth, educational institutions, and governments to develop and use science education as a fundamental basis for sustainable development in Asia and the Pacific.

Outcomes:

- Development of a Science, Technology and Engineering culture, especially among youth, to enable them to function more effectively as citizens of a knowledge-based society, through innovative approaches in science education;
- Improved access to quality education tools and resources through the use of information and communication technology networks to deliver science and engineering education to a wider audience, beyond those directly participating in the project;
- Improved regional cooperation among higher education institutions and inter-university to mobilize expertise and knowledge for the development and validation of new content and methodologies for a model course in science for sustainable development;
- Established principles and framework for regional collaboration on an innovative, large-scale, interdisciplinary programme on science, technology and engineering education in the context of education for sustainable development (ESD), with local, national and regional action to validate the framework through pilot activities.

FLAGSHIP Programmes

FORCE

FOSTERING SAFER AND RESILIENT COMMUNITIES – A NATURAL DISASTER AND CLIMATE CHANGE EDUCATION PROGRAMME

Background: The Asia-Pacific region is vulnerable to a broad range of natural disasters and the expected impacts of climate change. In 2006, 74% of people killed by natural disasters were in Asia. Natural disasters, in combination with human-induced conditions such as deforestation, pollution and soil erosion, pose serious challenges for communities and governments, which will be further exacerbated by climate change. The Hyogo Framework for Action adopted in 2005[8] emphasizes the need to understand the linkages between disaster risk reduction and climate change adaptation, and underlines the need for stakeholders to work towards reducing disaster vulnerabilities of communities by helping them build their capacity to deal with disasters.

Our Goal: To build self-reliance among communities in the Asia-Pacific region, based on knowledge, awareness, preparedness and mitigation, to manage hazards and vulnerability to natural disasters and climate change.

Outcomes:

- Enhanced capacities of communities in disaster risk reduction planning and disaster preparedness through the establishment of standardized practices for communities;
- Reduced loss of livelihood from natural disasters and climate change impacts;
- Improved knowledge and awareness of communities regarding climate change adaptation and disaster risk reduction, including sustainable environmental practices;
- Reduced human-induced disturbances that add to natural disaster problems.

[8]The Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters, adopted at the World Conference on Disaster Reduction, January 2005, Kobe, Japan.

Managing for Impact

MDGs RELEVANCE

The Regional Bureau's Science Support Strategy aims to contribute to the achievement of the Internationally Agreed Development Goals (IADGs), including the MDGs, as well as support conventions and the outcomes of major United Nations conferences and summits. The achievement of the MDGs and broader IADGs are of global importance both for developed and developing nations, as they constitute a long-term foundation for economic prosperity, social stability and peace in general. However, the IADGs will only be achieved by fully recognizing and mainstreaming the role of science, technology and innovation in sustainable development. Achieving the IADGs, including the MDGs, also calls for a substantial increase in ODA and other resources. The target of 0.7% of the gross national income of developed nations allocated to ODA has not been met by most OECD countries. Though not a science funding agency, UNESCO is strongly committed to providing its Member States with policy advise and technical assistance to make investments to achieve the development goals more effective. The Bureau's Regional Science Support Strategy, including its four Flagship Programmes, incorporates concrete solutions and steps to reach the development targets for the region.

ENSURING PROGRAMME EFFECTIVENESS, IMPACT AND VISIBILITY

The Bureau has identified a number of strategic directions in support of the Regional Science Support Strategy:

Develop Coherent and Demand-driven Country-based Programming Tools: The Bureau has produced a number of Country Programme Documents, articulating the organization's role within individual Member State Development Plans and within the Joint UN Programme and UN Development Assistance Framework (UNDAF). The strength of the UCPDs is that they are demand-responsive, as they were developed via joint consultations between the Bureau and the respective governments, National Commissions for UNESCO and other national stakeholders.

Deliver as One and Develop Strong Partnerships: The Bureau is fully committed to the UN reform aimed at improving coherence and synergy between the various programmes, funds, and agencies so that the full diversity and depth of expertise across the UN is mobilized to respond effectively to the global challenges of the 21st century. As such, the Bureau actively supports other UNESCO Offices and UN country teams

[9] These include the UN Framework Convention on Climate Change, the UN Convention to Combat Desertification, the Hyogo Framework of Action, the Convention on Biological Diversity, the Convention on Indigenous Peoples, and the Convention concerning the Protection of the World Cultural and Natural Heritage.

GOAL	MILLENIUM DEVELOPMENT GOALS FOR THE ASIA-PACIFIC REGION
1 Eradicate Extreme Poverty and Hunger	BREES promotes the role of research, science and technologies in natural resources management and climate change adaptation in order to enhance income and employment generation, local crop yields and food production. By enhancing the resilience of governments and communities to disasters, FORCE will help to mitigate poverty and hunger when such events occur.
2 Achieve Universal Primary Education	COMPETENCE provides important tools for improving knowledge and skills in science and technology. The teaching and learning of science linked to 'Education for Sustainable Development' (ESD) in the region will contribute to achieving better quality primary education as well as building a long-term culture of science, technology, research and education.
3 Promote Gender Equality and Empower Women	All flagship programmes have a strong gender component and proactively aim to involve more girls and women in science and technology at all levels, throughout the region.
4 Reduce Child Mortality	SWITCH-*in-Asia* will apply knowledge to ensure that people have access to safe drinking water and quality sanitation systems, thereby contributing to reducing child mortality in urban areas. FORCE aims at reducing casualties amongst school children and communities by creating better awareness and preparedness.
6 Combat HIV / AIDS and Other Infectious Diseases	SWITCH, BREES, FORCE and COMPETENCE will all contribute to reducing the spread of infectious diseases through a number of interventions such as improved water quality, sustaining ecological functions, ESD, and achieving a knowledge society.
7 Ensure Environmental Sustainability	Both SWITCH, COMPETENCE and BREES promote environmental sustainability by addressing wider ecological problems and spearheading innovative scientific and technological solutions for water and ecosystem services and functions, and by creating better awareness.
8 Develop a Global Partnership For Development	The Flagship Programmes will include innovative cooperation mechanisms at local, national and international levels to promote and fund the development, transfer and diffusion of applied sciences and appropriate technologies.

in the region to incorporate science, technology and innovation approaches in joint programming and UNDAF design and implementation.

The UN system in the Asia and the Pacific region has established a UN Regional Directors team (UNDG-AP). The UNDG-AP has a role in guiding UN reform at the country level by providing quality support and advice to the Resident Coordinators and UN Country Teams in the region. UNESCO is represented in the UNDG-AP by both the Director of the Regional Bureau for Science (Jakarta) and the Director of the Regional Bureau for Education (Bangkok). This new modality is expected to significantly improve interaction, cooperation and 'Delivery as One' in the region.

The quality of programme delivery will also be ensured via the development and maintenance of effective partnerships between stakeholders in the wider region (see Resources chapter below).

Strengthen Programme Delivery and Effectiveness: Considering UNESCO's broad mandate and limited resources, it is crucial that programme delivery remains effective and relevant to societal problems, now and in the future. The strategic direction of the Regional Bureau is to continue to shift its portfolio from the current large number of smaller, short-term initiatives towards a coherent and consolidated regional science programme. This will provide opportunities for building stronger partnerships, including with other UN agencies.

RESOURCES

The comparative advantage of the Bureau lies in its broad in-house science expertise, strong regional networks, financial support mechanisms, and communication strategies to address regional development challenges.

Human:

Science specialists in the Bureau and in other UNESCO field offices in the region act as authorities on important subjects, including freshwater, environmental, marine, earth, basic and engineering sciences, while cross-cutting experts provide support on topics such as ESD, Science Policy advise, disaster risk reduction, climate change, indigenous and local knowledge systems. As the Science Support Strategy and related Flagship Programmes require a holistic approach, the Bureau will further enhance the intersectoral cooperation between its experts, units and field offices.

Partnerships:

The Bureau can draw upon a wide range of skills and resources from its strong regional and global networks of institutions and experts. Collaboration will focus on regional dialogue and policies via cooperation with regional bodies such as ASEAN, ASPAC, and SEAMEO. Close cooperation with Category I & II institutions, which are respectively UNESCO and UNESCO-associated institutions, will help to incorporate cutting-edge and innovative science into the Bureau's work. Other partners such as national and regional institutions, universities National Commissions for UNESCO and CSOs will be mobilized strategically to achieve the highest impact.

Financial:

UNESCO is not a funding agency and its global annual budget for sciences is modest. The Bureau's consecutive biennium Programmes and Budgets combined with its extra-budgetary initiatives provide a coherent programmatic and financial foundation to pursue the Regional Science Support Strategy. In coming years, the Bureau will address the financial challenges by ensuring that activities are cost-effective, and strengthen development efforts that will build long-term partnerships with governments, bilateral agencies, the private sector, and foundations. Another approach is to develop pilot projects and feasibility studies, as a lead-up to the development of larger donor-funded initiatives. Such endeavours will help to diversify the financial resources and build financial sustainability into the Bureau's programming.

Communication:

The Bureau will make every attempt to connect stakeholders to one another in order to facilitate and strengthen synergies and collaboration. In so doing, the Bureau will not only spark important dialogue but also encourage an atmosphere of openness, acceptance, collaboration and change. The Bureau will also intensify efforts to inform the public about its work, science and related policies through the use of ICT, and to enlist the help of the media and others to jointly identify issues and priorities, and stimulate dialogue and participation in solving problems.

MONITORING AND EVALUATION

The Bureau will use a **Results-Based Management** (RBM) approach in the implementation of its Science Support Strategy, where performance is judged against pre-defined benchmarks and delivery targets. All the Bureau's programmes and activities have defined anticipated results that contribute to the achievement of overall regional and global programme objectives. RBM will also put the Bureau in a better position to take well-informed decisions, to learn from successes and failures, and to share these experiences with other stakeholders in the Asia-Pacific region.

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Infographics and Design by Paulina Mayasari

'It is not enough to build classrooms in devastated countries or to publish scientific breakthroughs. Education, Natural and Social Science, Culture, and Communication are the means to a far more ambitious goal: to build peace in the minds of men'.

from UNESCO's Constitution, 1945

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