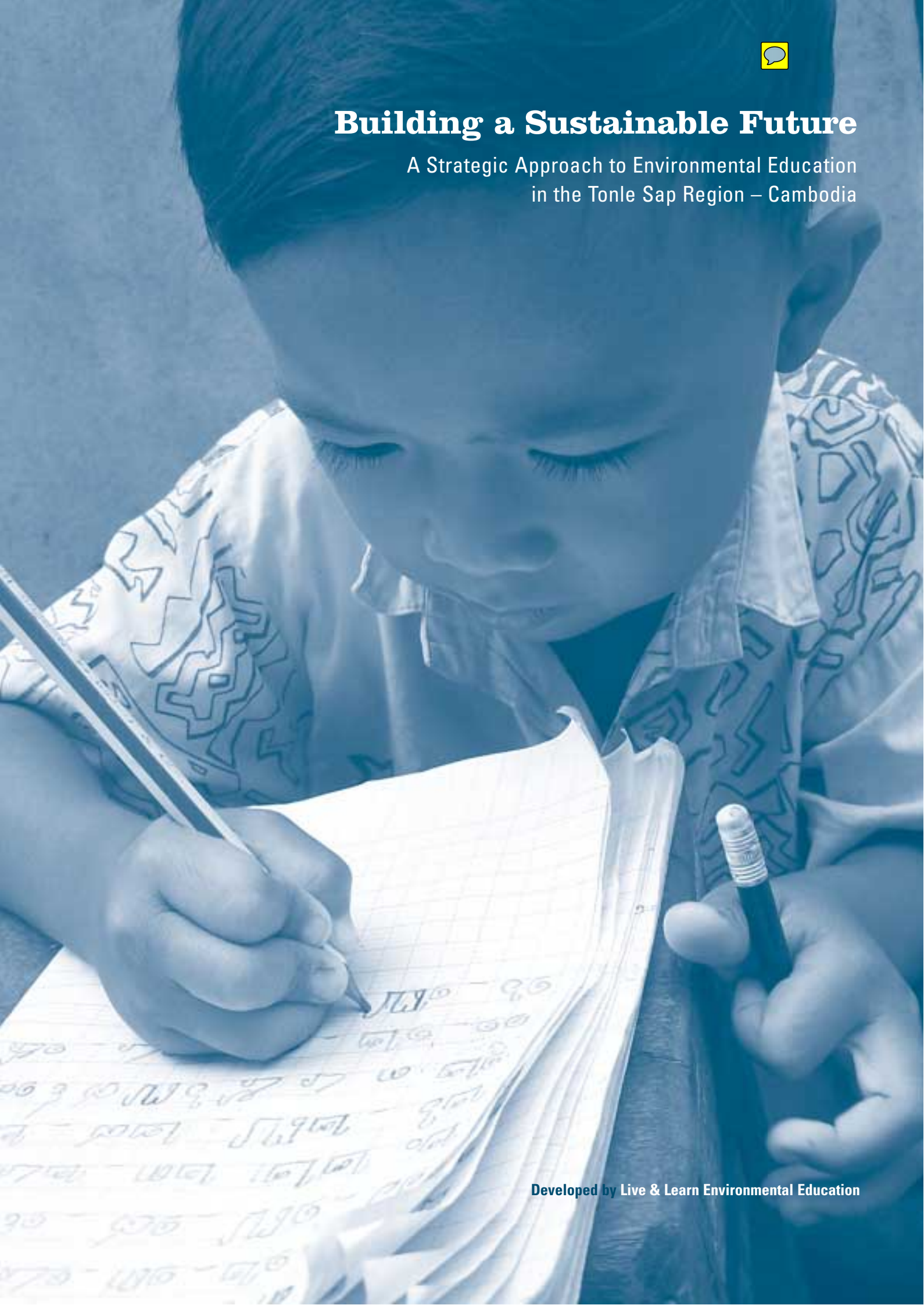




# Building a Sustainable Future

A Strategic Approach to Environmental Education  
in the Tonle Sap Region – Cambodia





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### ABBREVIATIONS

ADB	Asian Development Bank	PDA	Pilot and Demonstration Activity
CFDS	Cambodian Family Development Services	RAP	Rapid Assessment of Perceptions
EE	Environmental Education	TCU	Technical Coordination Unit, Ministry of Environment
FAO	Food & Agriculture Organisation of the United Nations	TSBR	Tonle Sap Biosphere Reserve
LLEE	Live & Learn Environmental Education	TSBS	Tonle Sap Basin Strategy
MDGs	Millennium Development Goals	UNDP	United Nations Development Programme
MOEYS	Ministry of Education Youth and Sports	UNESCO	United Nations Educational, Scientific & Cultural Organisation
CNMC	Cambodian National Mekong Committee	WAP	Water Awareness Programme
NGO	Non Governmental Organisation	WCS	Wildlife Conservation Society
NRM	Natural Resource Management		



## EXECUTIVE SUMMARY

The concept of sustainable development is far-reaching and complex. Its conceptual basis, socio-economic implications, and environmental and cultural links make it an undertaking that requires sustained commitment, innovation and cultural understanding. Building a Sustainable Future recognises the power of environmental education to enhance sustainable development and reduce poverty. It acknowledges that a society committed to achieving sustainability in a short time needs to reappraise practice at all levels.

Building a Sustainable Future is shaped by the many challenges facing the Tonle Sap and its people. It balances the preservation of the physical environment with the preservation of human rights and peace, the continued provision of sustenance health care and security, and the continued growth of diversity, good governance and the local economy. The sheer scope of this challenge means it is important to implement Building a Sustainable Future on a small scale initially, with a focus on using both existing and new knowledge to shape practice conducive to sustainable development.

Building a Sustainable Future is designed for stakeholders involved with sustainable development and poverty reduction in the Tonle Sap Basin; in particular government departments, non government organisations and international development and aid agencies. Its main purpose is to promote environmental education as central to the common pursuit of sustainable development in the Tonle Sap region. This is done by bringing forward five interlinked Strands which are proposed in a Strategic Approach for Action over a five year period. These five Strands have a multipurpose; they can be used as entry points for action and qualitative targets.

- |                  |   |
|------------------|---|
| <b>Strand 1:</b> | Create links and networks, exchange and dialogue among stakeholders in environmental education.   |
| <b>Strand 2:</b> | Provide a space and opportunity to formulate and promote actions towards sustainable development – through public forums, community and formal education. |
| <b>Strand 3:</b> | Cultivate increased quality and capacity of teaching and learning in environmental education.   |
| <b>Strand 4:</b> | Tailor environmental education towards the development of sustainable economies and livelihoods.  |
| <b>Strand 5:</b> | Enhance opportunities and skills of public participation in civil society.  |



Together the Strands form a coherent platform for environmental education planning and implementation. They will ensure that change in public attitudes and educational approaches keep pace with the evolving challenges of sustainable development on the Tonle Sap. The strands are shaped by formative research from the Tonle Sap and lessons learnt from environmental education projects world-wide. The Strands provides clarity on key areas that environmental education needs to address to have a sustained impact on poverty and sustainable development.

A series of Guiding Principles aim to support the delivery of environmental education in the Tonle Sap. They focus on: (i) public awareness and vision-building (ii) critical thinking and innovation (iii) formal education and training (iv) creating goodwill and partnerships and (v) linking of practice to policy.

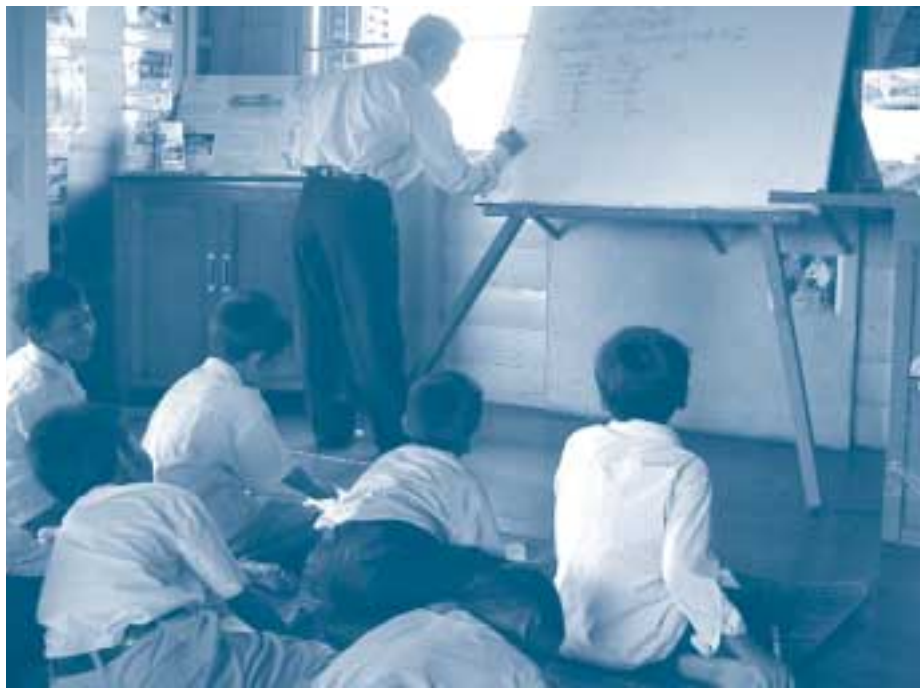
The Guiding Principles aim to deliver high-impact outcomes and assist in building a common vision for a long-term, innovative and versatile environmental education design which has the capacity to deliver action and change for the people on the Tonle Sap.

## INTRODUCTION

The Tonle Sap directly supports more than a million people and provides the single largest source of protein for Cambodia's young and growing population. The flooded areas are a vital regional resource, which provide breeding grounds and refuge for fish that will eventually migrate to the Mekong River. But the Tonle Sap basin is under enormous and unprecedented pressure to feed this growing population, and the threats to the lake's ecosystem - like over-exploitation of fish and wildlife and dry season encroachment, and land clearance of the flooded forest - are manifold. Degradation of the vegetation of the watersheds is destroying natural habitats, reducing water and soil quality and increasing siltation rates. Consequently, the poverty levels of the people in the basin appears worse than in other parts of rural Cambodia and than that of the population as a whole, despite the inherent richness of the lake.<sup>1</sup>

***The Tonle Sap directly supports more than a million people and provides the single largest source of protein for Cambodia's young and growing population.***

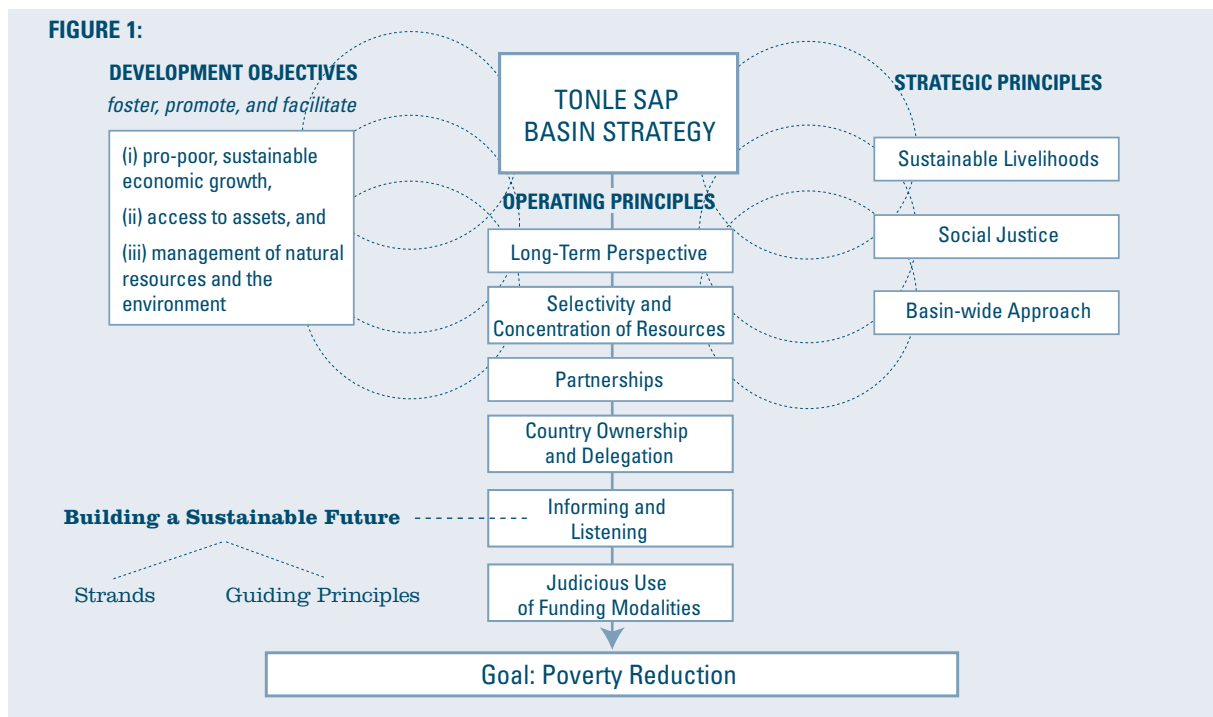
1. ADB (2002) Tonle Sap Environmental Management Project.



## Context and Rationale

The international community adopted the Millennium Development Goals (MDGs) in 2000 as an overarching framework for development and co-operation. Sustainable development is a dynamic and evolving concept with many dimensions and interpretations. It reflects locally relevant and culturally appropriate visions for a world in which development "meets the needs of the present without comprising the ability of future generations to meet their own needs".<sup>2</sup> The MDGs help turn these visions into reality by overcoming poverty, improving health, securing educational opportunities and protecting the environment.

The Tonle Sap Basin Strategy (TSBS) aims to reduce poverty and the strategy provides a major response to meet the poverty-environment challenge on the Tonle Sap.<sup>3</sup> The TSBS development objectives are to foster, promote, and facilitate (i) pro-poor, sustainable economic growth, (ii) access to assets, and (iii) management of natural resources and the environment. The goal and the objectives will be achieved through three Strategic Principles and seven Operating Principles as shown in Figure 1.



2. World Commission on Sustainable Development (1987) *Our Common Future*, Oxford University Press, p. 43.

3. A complete version of the Tonle Sap Basin Strategy can be obtained from [http://www.adb.org/Projects/Tonle\\_Sap/default.asp](http://www.adb.org/Projects/Tonle_Sap/default.asp).



The strategy focuses on two core areas; (i) rural development and environment and (ii) human development. In respect of rural development and the environment, it aims to expand the knowledge base on which the sustainable utilization and preservation of the basin depends, addresses ways in which the livelihoods of the communities can be enhanced, improves catchment management, and strengthens the regulatory and management framework and institutional structures at local and national levels that are needed to support development.

In the field of human development, it provides targeted support in health and education. Crosscutting themes ensure that attention is paid to vulnerable groups, governance, resource cooperation, and the private sector. Implementation of the strategy would afford a significant and positive contribution to more effective basin management; offer possibilities for cooperation with local, provincial, and national stakeholders to balance ever-increasing demands on the lake's resources; and encourage continuity, give confidence to stakeholders, and present opportunities to resolve current and future challenges.

The TSBS is based on the spirit of collaboration between the government, organisations and individuals to meet the poverty and environment challenge and has inspired many partnership and strategically interlinked initiatives on the Tonle Sap.

The **rationale** behind the strategic Strands and Guiding Principles outlined in Building a Sustainable Future is founded on a Rapid Assessment of Perceptions (RAP) of environmental issues in the Tonle Sap Region. This research was undertaken over a period of two months in consultation with many organisations and communities on the Tonle Sap.<sup>4</sup> The research revealed that most communities have a comprehensive knowledge about the environment but do not have the access to power, processes and proficiency enabling them to link this knowledge to sustainable livelihoods and change. The RAP report highlighted that a lack of strategic cohesion (on environmental education) is posing major limitations to its sustained support, vision and impact. This lack of strategic focus has made it difficult to assess impact and learn from current and past EE projects and programmes.

4. A complete version of the RAP can be obtained from [http://www.adb.org/Projects/Tonle\\_Sap/default.asp](http://www.adb.org/Projects/Tonle_Sap/default.asp).



## Environmental Education on the Tonle Sap

In the past, many organisations and agencies have delivered environmental education using varied approaches and tools. The following table presents an indicative – not exhaustive – overview of key environmental education initiatives and stakeholders.

<b>Table I : Overview of Key Environmental Education Initiatives</b>	
<b>Organisation</b>	<b>Activities</b>
FAO	<ul style="list-style-type: none"> <li>• established the floating GECKO Centre in 1999.</li> <li>• outreach programme, non-formal education in fishing communities.</li> </ul>
Mlup Baitong	<ul style="list-style-type: none"> <li>• development of curriculum manual (with FAO and Osmose).</li> <li>• professional development of teachers.</li> <li>• broadcasting of environmental issues and themes.</li> <li>• delivery of environmental education workshops for monks</li> </ul>
Osmose	<ul style="list-style-type: none"> <li>• development of curriculum manual (with FAO and Mlup Baitong).</li> <li>• EE workshops with youth in Battambang.</li> <li>• ranger and income generation programmes in Prek Toal</li> </ul>
Ministry of the Environment	<ul style="list-style-type: none"> <li>• Provincial Environment Department in Battambang and Pursat.</li> <li>• World Environment Day and Clean Up the World Day;</li> <li>• quarterly newsletter on environmental themes.</li> </ul>
CFDS	<ul style="list-style-type: none"> <li>• development of materials</li> </ul>
SIPAR	<ul style="list-style-type: none"> <li>• development of materials</li> </ul>
CSARO	<ul style="list-style-type: none"> <li>• recycling projects in Phnom Penh</li> </ul>
Wetlands International	<ul style="list-style-type: none"> <li>• development of resources</li> </ul>

While these environmental education initiatives are not jointly coordinated, the organisations behind them recognise the value of environmental knowledge to sustainable development and of inter-organisational co-operation and collaboration in developing environmental education. In this regard it is true to say that everyone is a stakeholder in environmental education. All of us will feel the impact of its relative success or failure, and all of us affect the impact of environmental education by our behaviour whether it may be supportive or undermining. Only through cohesive strategic thinking can environmental education move beyond self-development and reach a level where meaningful impact can be achieved, measured and built upon.





***"My poverty is having no land, buffalo, hoe, rake, plow, transport, mosquito net, cooking pots or even plates to eat from and spoon and fork to pick up the food. This means I cannot possibly get enough food to eat because I lack the things I need to keep me alive for much longer."***

The "voice" is of a woman in her mid-60s living in Kampong Thom, who in her lifetime has known the comforts of prosperity and the cruelty of war and, in the return to peace, is left with nothing.

Source: ADB. 2001. Participatory Poverty Assessment: Cambodia. Manila.

## **Links between Environmental Education and Poverty Reduction**

Poverty and quality of life are the two issues central to all environmental education. Quality of life means different things to different people and in different contexts, and all human beings have a hierarchy of needs they seek to fulfil. At the most basic level, this might include regular access to safe drinking water and nutritious food, access to basic sanitation and health services, a safe and secure living environment. Many of these needs can be met with a regular income. Others can be met with broader support mechanisms, through government, public or private sectors. In principle, environmental education and poverty eradication are linked by the issue of need. For impoverished populations, it can be argued that the generation of a stream of income (either monetary or in kind) is the only way to truly meet their needs. If this should entail environmental degradation, then so be it, since the choice at the margin is worse. The threat to long-term needs is considered secondary, since those who starve today will not see tomorrow.

***...environmental education and poverty eradication  
are linked by the issue of need.***

Assumptions that environmental awareness leads to change and that people choose to live in sustainable ways based on their knowledge are very problematic. It's well known that many communities and governments, for various reasons, choose to clear fell their forests, despite knowing it will have devastating consequences. This is why environmental education must do much more than inform people about the environment and environmental values. It must also show that by building environmental assets, communities can produce a stream of income both now and for the future, to meet continuing needs.

This is a considerable challenge, but it is not impossible. It requires a versatile environmental education design, driven by existing structures, assets and good will – all set within a new context of thought and behaviour. Most critically, environmental education needs to start from wherever different communities are at. Introducing unfamiliar approaches that people can't identify with is likely to have a very limited impact. Traditional knowledge may lack the capacity to deal with current problems, but it is the starting point for the construction of new knowledge. This new knowledge should be passed on through an action-based learning process, or learning by doing. An introduced 'packaged solution' will have little local ownership and, therefore, very little sustained impact.



**Table II: Strategic Approach for Action 2005-2009**

<b>Strands</b>	<b>2005</b>	<b>2006</b>
Create links and networks, exchange and dialogue among stakeholders in environmental education.	<ul style="list-style-type: none"> <li>Status review of EE</li> <li>Stakeholder analysis</li> <li>National Stakeholders meeting</li> </ul>	<ul style="list-style-type: none"> <li>National Stakeholders meeting</li> <li>Develop a EE website/link on the Tonle Sap</li> <li>Establish National Council for Env. Education (NCEE)</li> <li>Implementation of joint environmental initiative</li> </ul>
Provide a space and opportunity to formulate and promote actions towards sustainable development – through public forums, community and formal education.	<ul style="list-style-type: none"> <li>Establish a mobile Theatre and Drama Unit</li> </ul>	<ul style="list-style-type: none"> <li>Training of mobile team</li> <li>Development of theatre resources and videos</li> <li>On-going touring and awareness raising in communities</li> <li>Evaluation of impact and review approaches</li> <li>Up-scaling and delivery of out-reach programs through floating education centers</li> </ul>
Cultivate increased quality and capacity of teaching and learning in environmental education.	<ul style="list-style-type: none"> <li>Curriculum Inventory</li> <li>Development of curriculum modules and resources with Pedagogical Research Department</li> </ul>	<ul style="list-style-type: none"> <li>Teacher Consultations</li> <li>Teacher Training For</li> <li>Establish and Support Water Education and</li> </ul>
Tailor environmental education towards the development of sustainable economies and livelihoods.	<ul style="list-style-type: none"> <li>Identify 10 pilot communities</li> <li>Application of innovative community learning tools conducive to sustainable development</li> </ul>	<ul style="list-style-type: none"> <li>Development of Resources</li> <li>Modifications to learning tools</li> </ul>
Enhance opportunities and skills of public participation in civil society.	<ul style="list-style-type: none"> <li>Media research and media stakeholders meeting</li> </ul>	<ul style="list-style-type: none"> <li>Develop high-quality media package on the Tonle Sap</li> <li>Develop and deliver training formula for journalists with Cambodia Communications Institute</li> </ul>



The Strategic Approach for Action 2005-2009 is based on the findings from the RAP. It is build on four important assumptions: (i) poverty reduction and sustainability is a long-term process (ii) environmental education will itself be transformed during this process, (iii) new initiatives should be built on past progress and achievements and (iv) innovative education and critical awareness are key building blocks to poverty reduction and sustainability. The Strategic Approach for Action 2005-2009 aims to provide a clear practical plan on which to shift environmental education into a paradigm of change. A proposed National Council for Environmental Education will provide extensive network support to the many Tonle Sap initiatives and ensure that people and groups are informing and listening to each other and working towards a common goal.

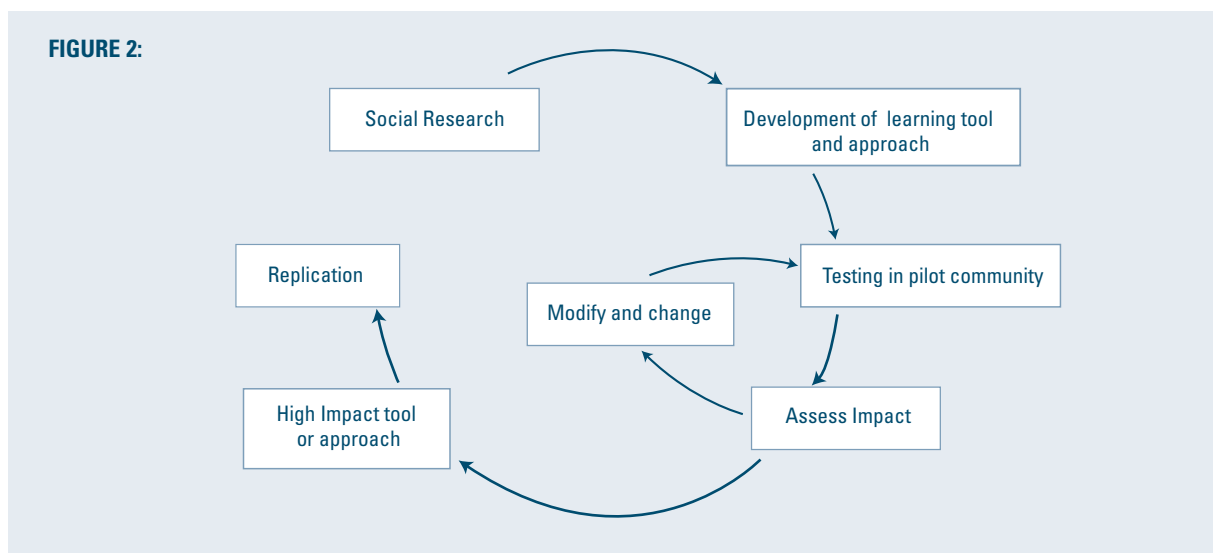
2007	2008	2009
Review and modifications		Review and modifications
NCEE annual meeting	NCEE annual meeting	NCEE annual meeting
s and projects by NCEE members with collaboration and support from the NCEE network		
munities, pagodas and schools		
	Evaluation of impact and review approaches	Evaluation of impact and review approaches
Integration of lessons learnt from National Env.Education and Awareness Campaign into out-reach programs.	Evaluation of impact and review approaches	Evaluation of impact and review approaches
and MOEYs	Review and modifications	
Testing forums	Teacher Training Forums	Teacher Training Forums
Training Network through Cambodian Schools		
Evaluation of impact and review approaches		Evaluation of impact and review approaches
Replication throughout the Tonle Sap Region through the Tonle Sap sustainable Livelihoods project		
	Evaluation of impact and review approaches	Evaluation of impact and review approaches
Develop mini-strategy for media involvement in the Tonle Sap	Implementation of mini-strategy	
Evaluation of impact and review approaches		Evaluation of impact and review approaches



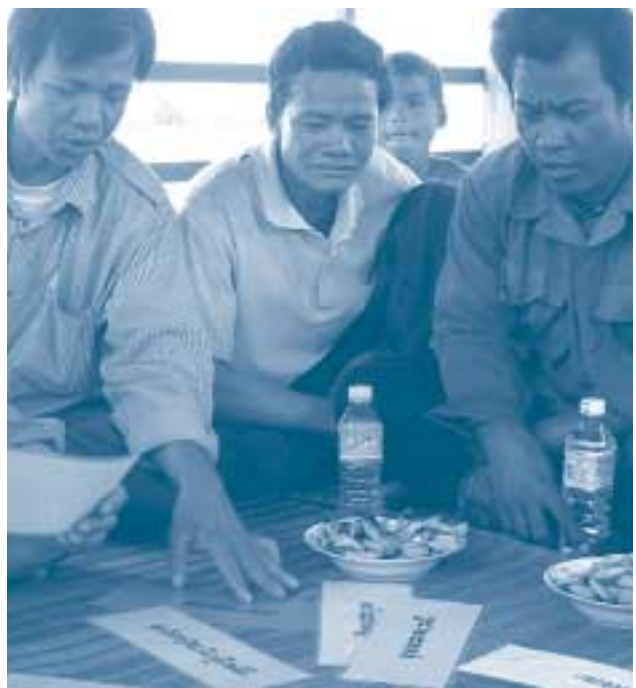
## GUIDING PRINCIPLES FOR IMPLEMENTATION

Education systems, government departments and non-government organisations must develop the capacity and tools to instigate community concern and link this concern to action and change. This can be done using drama, media campaigns, professional development for teachers and journalists, water quality monitoring, video production, curriculum development, Participatory Learning and Action, learning circles, clean-up campaigns, environmental competitions for children, environment centres, mobile training teams, commune advocacy and more. The impact and success of these tools depend on thinking behind them and their delivery. But they all have the capacity to create change and, at the same time, to protect the status-quo.

With this in mind, education methods and tools should be research-based and thoroughly tested and, if necessary, modified before implementation. A process displayed in the diagram below.



While some methods and tools are harder to put in practice than others, there are certain core principles that should drive an environmental education initiative to ensure maximum impact. The remainder of this chapter will outline some these principles and display the various outcomes that could be expected in the context of Tonle Sap and Cambodia.



## Public Awareness and Vision Building

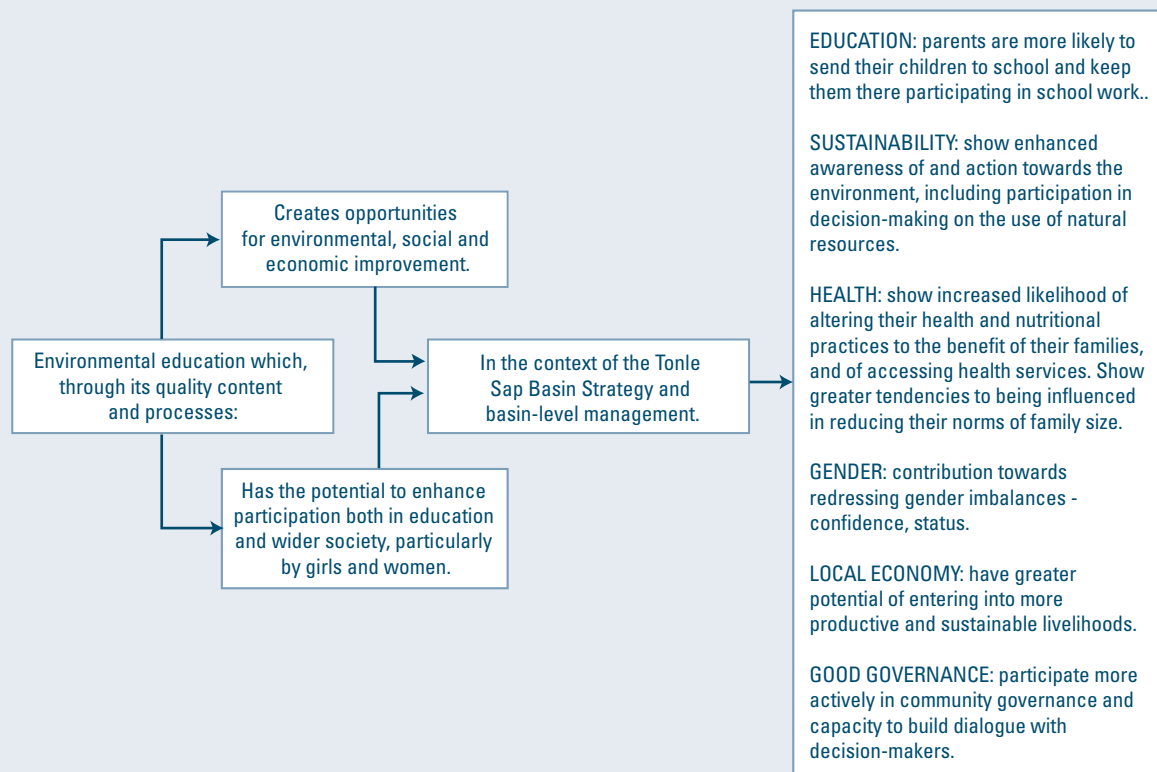
Environmental education can make a significant contribution to the MDGs. The significance of the Tonle Sap goes far beyond the local communities living on and along the lake. Indeed, it has immense national and international importance. In Cambodia, approximately 36% of the population live below the poverty line.<sup>4</sup> The incidence of poverty in rural areas is four times higher than that reported in Phnom Penh – notably, rural people have an average income that is less than one third of urban incomes. Approximately 31% of Cambodians have completed less than one year of formal schooling, 96% cook with firewood at unsustainable extraction rates, and less than one per cent have electricity for lighting.

Raising public awareness and support for sustainable development in the Tonle Sap Region should feature as a key aim of the environmental education agenda in Cambodia. The MDGs provide a relevant platform to launch national and international awareness campaigns on the Tonle Sap. Media agencies are key stakeholders in promoting broad public awareness and ownership without which environmental education would remain the concern of a few champions and educational institutions. A surge of public concern and support for sustainable development would also increase public and political commitment. To create such a surge, environmental education will need to strategically link with existing national and international obligations.

4. The poverty line is the per capita expenditure needed to secure an intake of 2,100 calories.



**FIGURE 3: ENVIRONMENTAL EDUCATION'S POTENTIAL CONTRIBUTION TO THE ACHIEVEMENT OF THE MDGs**



International obligations such as those aimed at protecting biodiversity and water resources can have a positive impact on environmental education programmes. They provide a context for legitimising environmental education and allow governments and the donor community to allocate funding for specific initiatives. However, the role of education in these initiatives is often championed by scientists rather than educators and is thus unlikely to match the educational realities on the ground. So it will be important to build collaboration between these two professions.



## Critical Thinking and Innovation

Critical thinking and problem solving should take place in an environment in which people can identify, justify and critique cultural and traditional values and practices. In a community setting, this may bring forward conflicting views, which will need to be managed and transformed into positive action. In many cases, innovative approaches that respect local knowledge make it easier for participants to cope with perceived risks involved with behaviour change. A process-based approach to long-term change can be complex, so high quality facilitation is essential.

The role of facilitators is fundamentally different to the role of teachers. Facilitators are interested in the developmental process – interaction and dialogue – where training and teaching often focuses on the direct transfer of technical skills and knowledge. The Formative Research Study concluded that communities in the Tonle Sap Region are very knowledgeable about the environment, including fish stock, water-quality, biodiversity and the ‘cause and effect’ theory. High quality facilitation and good community processes have the capacity to take this local knowledge and link it to sustained action. Developing a pool of highly effective and mobile facilitators is an essential investment for an environmental education programme. These facilitators need to identify, and sometimes create, the space for critical thought within the Tonle Sap culture and the following principles can assist in creating this space:

- Appreciation for cultural diversity; recognising the multi-cultural make-up of the population on the Tonle Sap;
- Respect and tolerance of differences in gender, religion, ethnic origin and opinions;
- A strong commitment to the building of human capacity and local ownership in all aspects of facilitation;
- Using local indigenous knowledge of fisheries, flora and fauna, agricultural practices, water use, etc;
- Identify and support practices and traditions that build sustainability;
- Build on local virtues of communication, including the use of local languages and identity.

The ultimate goal with facilitation is to build good will and understanding and to produce action through critical thinking and awareness. The human element of environmental education should never be underestimated – after all, peaceful coexistence among people is closely linked with less suffering, less hunger and less poverty. High quality learning tools are required to ensure effective



facilitation. Visual learning tools, for example, in a community where literacy rates are up to 70%. By integrating visual communication activities with aspects of Khmer culture, communities have a higher chance of participating in the creation of sustainable development.

### ***The human element of environmental education should never be underestimated...***

#### **Some effective drivers for environmental education:**

**Religious affiliations** play a major part in daily life in Cambodia, especially in the formation of attitudes towards issues like education, health and the environment. Buddhism holds the appreciation of the world's resources as a fundamental tenet of its faith. The role of Pagodas have considerable potential to support environmental education by linking people's spiritual learning and their sense of relationship with the environment. Pagodas hold much educational and spiritual influence especially in rural communities.

**Radio** is a key and popular channel of information delivery in rural communities. Given this, the proposal to air a series of minute-long environmental documentaries designed to change attitudes offers an exciting opportunity. Documentaries could explain case studies of successful ventures by communities in the TSBR. Local 'champions' (well known people) could host the documentaries. As could women, who head many households in the Tonle Sap Region region and as such have the primary role of environmental management in their household. Locals would be more likely to alter their practices if they were able to identify with a female role model or local champion.

**Drama and theatre** is a key visual tool in environmental education and can be very effective in mobilising action. But they can also be viewed as 'pure entertainment' if they aren't linked to a broader development approach, making their impact limited. Thus, any theatre or dramatic performances should be followed by discussion sessions, in which people are encouraged to ask questions about environmental issues and about on-going actions they could take to alleviate pressure on resources.

Whichever way environmental education is delivered it must have the characteristics of any high quality learning experience and be modelled on the values of sustainable development itself.





## Formal Education and Training

The greatest limitation to formal education and training occurs when facts and knowledge are transferred from teacher to student without any related development of skills or understanding of issues. Education is meaningless unless students have opportunities to apply learned knowledge and newly acquired skills in their community and put them toward something they (and their parents) see as important.

***Education is meaningless unless students have opportunities to apply learned knowledge and newly acquired skills...***

Environmental education offers the possibility of appealing to what students already know and at the same time expanding their understandings. Locally significant issues relating to the environment and its management provide a productive, relevant, development-oriented focus for literacy (and numeracy) teaching in primary schools. High quality environmental education integrates work in schools with non-formal education and training in a way that makes it both consistent with learning in the community and continuous with learning that occurs later (or earlier) in life. Schooling is free in Cambodia and the costs involved in sending children to school are relatively small. Nevertheless, having an extra hand to help at home is sometimes a priority for parents over educating their children – the majority of the population has had only one year schooling. If parents see the meaning of their children's education then school attendance is likely to increase.

During the RAP, it was often mentioned that the quality, commitment and accountability of teachers can be seriously affected by factors like poor pay rates and the relatively low status of teaching as a career. Teacher absenteeism is quite high, as is a general lack of enthusiasm towards any extra work or initiative. Consequently, there is a significant need to integrate environmental education across curricula, exams, teacher training and education policy.

Detailed and standardised curriculum tend to be regarded by teachers as rigid and prescriptive and difficult for teachers to adapt to meet local needs. On the other hand, a centralised curriculum with appropriate environmental education could be highly influential in delivering sustained change across an education system. So getting the balance right in curriculum development is critical. In its early



stages, mainstreaming environmental education needs to focus on enhancing teachers' pedagogic practices within existing curriculum and assessment frameworks, particularly in using the local environment as a learning resource. This will include developing appropriate learning materials and teacher education and training. In the longer term, change in the assessment system should be coordinated with curriculum and pedagogic change, particularly in adapting the more analytical approach to have a more social and economic emphasis. Teachers are concerned about being able to handle a complex and value-laden process. Thus, it is critical that intense training and commitment to environmental education with development themes needs to become a policy aim for the government, coupled with the development of dynamic rather than passive qualities in students and the use of interdisciplinary inquiry to foster environmental awareness.

### **Creating Good Will and Partnerships**

Environmental education is essentially cross-sectoral and must engage a wide variety of institutions. The effectiveness of environmental education will depend on the strength of the partnerships, networks and alliances it develops, among stakeholders at all levels. There are many organisations working in the Tonle Sap Region so, to avoid duplication and time-wasting, collaborative planning is crucial. The parties involved will especially need to co-ordinate their approaches on managing community expectations. Otherwise, sustainable development may be viewed as a 'funded project' as opposed to 'a way of living'. Environmental education partners should be outward-looking, seeking to make connections using initiatives, programmes, and networks through which environmental education will be promoted and sustained. Making connections with national governments is particularly important because of their central coordinating role and resources, as is connecting with civil society networks, because their grassroots connections can facilitate community change.

A key aspect of partnerships and networking will be the regular and systematic exchange of experience in, and information on, environmental education. This could be done through a National Council for Environmental Education, which would bring stakeholders together on a regular basis. Observing others' methods can be a significant source of learning, innovation and inspiration to persevere.



**Table III: Role of stakeholders**

Governmental & intergovernmental bodies	<ul style="list-style-type: none"> <li>• inclusive policy-making and planning.</li> <li>• obligations to international obligations eg. MDGs and Ramsar.</li> <li>• public campaigns.</li> <li>• embedding environmental education in educational systems.</li> </ul>
Civil society & non-governmental organisations	<ul style="list-style-type: none"> <li>• public awareness-raising, advocacy, campaigns and lobbying.</li> <li>• consultation and input into policy-making.</li> <li>• delivering of environmental education, primarily in non-formal settings.</li> <li>• participatory learning, action and participation.</li> <li>• facilitate dialogue between government and people.</li> </ul>
Higher Education Centres	<ul style="list-style-type: none"> <li>• pioneer new methodologies of delivery and teaching.</li> <li>• heightening awareness and critical thinking among students and scholars.</li> <li>• focal points for advocacy and campaigning.</li> </ul>
Pagodas	<ul style="list-style-type: none"> <li>• enhance sustainable development and living through religious teachings.</li> <li>• up-skilling of religious leaders.</li> </ul>
Schools and teachers	<ul style="list-style-type: none"> <li>• facilitate environmental education across the curriculum.</li> <li>• linking environmental action in schools and action in the community.</li> <li>• allow flexibility and openness to include environmental education.</li> </ul>
Communities	<ul style="list-style-type: none"> <li>• sustaining action and change.</li> <li>• community leaders promote sustainable practice</li> <li>• communities involved with monitoring and evaluation</li> </ul>

Special mention must be made of ethnic minorities as a key stakeholder, because of their particular and long-term links to the Tonle Sap and because of the many threats to their living and future. They are stakeholders both in the active and passive sense, but more especially represent a source of knowledge in balancing the use and preservation of the lake's natural resources. Without idealising or romanticising this relationship of human being to nature, the intimate knowledge and sustained use of their environments gives ethnic minorities a role in informing the wider debate and offering detailed insights into sustainable practices.



## Linking Practice to Policy

Environmental education must be facilitated by supportive and action-oriented education and development policies. Sustainable development is a national priority in Cambodia, and an international priority as part of the Millennium Development Goals. It now needs to become an organising principle in terms of educational legislation and policy also. This will require inter-ministerial consultation and cooperation and ongoing policy consultations.

Strategic frameworks and long-term planning can make a real difference in mobilising political will, resources and effort. At national level, clear guidance will be necessary to ensure that environmental education has a place in relevant policies and international agencies and civil society groups have a key role in providing this. This guidance will include:

- Identifying the policy areas where environmental education should have an explicit place;
- Working to embed the environmental education vision and guiding principles harmoniously in these policy areas;
- Imagining new ways of ensuring the cross-departmental communication and cooperation environmental education requires;
- Suggesting ways of articulating sustainable development as an over-arching framework for national policy and how to promote ownership of it;
- Identifying key national research issues to elucidate critical policy questions.

A further role of government (MOEYS) is the mobilisation of financial resources across ministerial departments; as well as integrating allocations into the normal budgetary process. Environmental education should have a prominent place in long-term development strategies and national development planning.

National civil society and NGOs and networks will play a central role in linking local groups with policy-making fora, undertaking advocacy and lobbying and providing a channel for bringing small, local and innovative experiences to the attention of government and the public.



**Table IV: Expected Outcomes**

Strands	Outcomes	Outputs
Create links and networks, exchange and dialogue among stakeholders in environmental education	<ul style="list-style-type: none"> <li>• Improved impact, coordination and planning of environmental education activities</li> </ul>	<ul style="list-style-type: none"> <li>• Establishment of a national coordinating body on environmental education</li> <li>• Establishment of consortiums between NGOs and governments for the implementation of environmental education</li> <li>• Joint project design, planning and evaluation</li> </ul>
Provide a space and opportunity to formulate and promote actions toward sustainable development – through public forums and community and formal education	<ul style="list-style-type: none"> <li>• Heightened public awareness of the principles behind sustainable development</li> </ul>	<ul style="list-style-type: none"> <li>• Public debates and forums on issues of poverty reduction and sustainable development</li> <li>• Enhanced profile of sustainable development in the media</li> <li>• Replication of local success stories</li> <li>• National Stakeholder meetings</li> <li>• Mobile training</li> </ul>
Cultivate increased quality and capacity of teaching and learning in environmental education	<ul style="list-style-type: none"> <li>• Increased profile of the principles of sustainable development in formal education</li> </ul>	<ul style="list-style-type: none"> <li>• Integration of environmental education across the national curriculum</li> <li>• Design and production of high quality, process-focused environmental education resources</li> <li>• Integration of environmental education through teacher training colleges</li> <li>• Enhanced profile of environmental and sustainability subjects in exams and assessments</li> <li>• Teacher training</li> </ul>
Tailor environmental education to the development of sustainable economies and livelihoods	<ul style="list-style-type: none"> <li>• Reduction of poverty on the Tonle Sap</li> </ul>	<ul style="list-style-type: none"> <li>• Increase in sustainable livelihoods and innovative local economies</li> <li>• Increased attendance and enrolments in schools</li> </ul>
Enhance opportunities and skills of public participation in civil society	<ul style="list-style-type: none"> <li>• Increased (public) recognition of the values of education and participation</li> </ul>	<ul style="list-style-type: none"> <li>• Increased capacity of young people to debate, build dialogues and advocate for sustainable development</li> </ul>



## OUTCOMES AND IMPACT

In support of the two central issues at the heart of environmental education, poverty and quality of life the desirable outcomes of environmental education are described in table IV. These outcomes are high-level outcomes which will need to be given more specific shape in various contexts – at provincial and commune level. The following table lists outcomes against the RAP identified Strands.

Furthermore, echoing the values which environmental education should promote, potential behavioural outcomes would include:

- Respect for other people of current and future generations, recognising their right to a life free of poverty and to equitable sharing in natural resources;
- Respect for the Tonle Sap eco-systems, based on an understanding of how they work and how we can manage them sustainably;
- Knowing how to make choices and decisions, individually and collectively, which take into account the long-term future of social equity, ecological viability and sustainable economies;
- Committed and aware individuals with an open mind and the capacity to envision alternative futures and create change within their communes;
- Capacity to work with others to bring about structural or institutional change within commune councils so that efforts can be embedded within the mainstream.

## MONITORING

As the main aim for environmental education is about changing knowledge, attitude and practice, adequate processes of monitoring and evaluation must be in place from the start of an initiative. Without these, it is impossible to ascertain whether an initiative is making any difference and what that difference is. The most effective environmental education initiatives use formative research and qualitative indicators could be based on data from this research. Community input into the development of indicators is critical. Otherwise, they will be tailored to the needs of agencies and organisations instead of the needs of communities. In other words, monitoring and evaluation frameworks should be designed for communities to measure their progress in achieving sustainable development goals. The results of monitoring and evaluation will assist in the assessment and change of approaches. If something is not working in the project design there must be the flexibility for change and adaptation.



## CONCLUSION

Environmental education cannot create and sustain change in isolation. In the context of the Tonle Sap, environmental education needs to incorporate local culture, spiritual beliefs and religions. Indeed, good human relationships, tolerance and understanding are the cornerstones of environmental education. The quest for sustainable development is multi-faceted, so environmental education is a great way to workshop a community's different ideas about meeting basic needs while living within our environmental means. Environmental education can also cut through a multitude of social complexities like governance, gender dynamics, economics and citizen participation, to inspire people to believe that each of us has the power and the responsibility to make a positive contribution to environmental change.

***Environmental Education must inspire people to believe that each of us has the power and the responsibility to make a positive contribution to environmental change.***

The impact of this strategy will depend on the strength of stakeholder commitment and on co-operation at local (commune and provincial), national, regional and international levels. Practical networks and alliances will be essential in building a common environmental education agenda. Once this commitment and cooperation is achieved, environmental education can be put to work to change the attitudes and values of thousands of people and to inspire decisions and actions that will bring within reach the goal of sustainable development.

# knowledge & action

*'...to teach is not to transfer knowledge  
but to create the possibilities for the  
production and construction of  
knowledge and action..'*

Paulo Freire