

Monitoring and Assessing Progress during
the UNDESD in the Asia-Pacific Region:

A Quick Guide to Developing National ESD
Indicators



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Monitoring and assessing progress during the UNDESD in the Asia-Pacific Region:
A quick guide to developing national ESD indicators. Bangkok: UNESCO Bangkok, 2007.

16 pp.

1. Education. 2. Sustainable development. 3. Educational indicators.
4. Monitoring. 5. Guides.

ISBN 92-9223-115-4 (Print Version)

ISBN 92-9223-133-2 (Electronic version)

This publication was written by Daniella Tilbury, Sonja Janousek and Leanne Denby of Macquarie University, Australia and Derek Elias (Programme Specialist) and Joel Bacha (Project Officer) of UNESCO under the guidance of the Education for Sustainable Development Programme at UNESCO Bangkok.

© UNESCO 2007
Published by the
UNESCO Asia and Pacific Regional Bureau for Education
920 Sukhumvit Rd., Prakanong
Bangkok 10110, Thailand

Chief Editor: Caroline Haddad
Design/Layout: Sirisak Chaiyasook

Printed in Thailand

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APE/ESD/07/OP/022-1500

Table of Contents

Acknowledgements	iv
List of Acronyms	iv
Explaining the <i>Quick Guide</i>	1
A. How should this <i>Quick Guide</i> be used?	1
B. Who is this <i>Quick Guide</i> for?	1
C. Why was the <i>Quick Guide</i> developed?	1
D. Who developed the <i>Quick Guide</i> ?	2
The United Nations Decade of Education for Sustainable Development (DESD)	2
Eight Key Messages from the <i>Guidelines</i>	3
1. Indicator types	3
2. Priorities, goals and targets	5
3. A national indicator framework	7
4. Data collection	7
5. Role of UNESCO National Commissions and UNESCO Offices	10
6. Stakeholder capacity building	10
7. Indicator linkages	11
8. Indicator development steps	11
In Summary	15
References	16

Acknowledgements

The *Quick Guide* was developed through the “Asia-Pacific Decade of Education for Sustainable Development Indicators Project” implemented under the Japanese Funds in Trust through UNESCO Bangkok with assistance from the Commission on Education and Communication of the World Conservation Union in conjunction with Macquarie University. Two reference groups, the Expert Team and Guidelines Review Team, were asked to highlight key messages contained in the *Asia-Pacific Guidelines for the Development of National ESD Indicators*. Their responses influenced the production of this resource. In addition, a number of UNESCO National Commissions leading the Decade across the region further honed the contents during the “Workshop for the Development of Asia-Pacific National DESD Monitoring Systems” held in Bangkok from 2-4 April 2007.

List of Acronyms

CEC	Commission on Education and Communication (IUCN)
DESD	Decade of Education for Sustainable Development
EFA	Education for All
ESD	Education for Sustainable Development
IIS	International Implementation Scheme
IUCN	World Conservation Union
MDGs	Millennium Development Goals
MU	Macquarie University
NGO	Non-governmental Organization
UNECE	United Nations Economic Commission for Europe
UNESCO	United Nations Educational, Scientific and Cultural Organization

Explaining the Quick Guide

A. How should this Quick Guide be used?

This document should be read in conjunction with the *Asia-Pacific Guidelines for the Development of National ESD Indicators* (UNESCO Asia and Pacific Regional Bureau for Education, 2007). The *Guidelines* is a resource designed to assist UNESCO Member States in the Asia-Pacific region to develop national ESD indicator frameworks for assessing progress during the UN Decade of Education for Sustainable Development (DESD). This *Quick Guide* provides Asia-Pacific stakeholders with an overview of the key messages and tools identified in the *Guidelines*.

By highlighting sections from the *Guidelines*, the *Quick Guide* serves as a map to assist stakeholders in finding relevant information, as necessary.

B. Who is this Quick Guide for?

The *Guidelines* and *Quick Guide* were primarily designed with the needs of UNESCO National Commissions and UNESCO Offices in mind. However, additional stakeholders from the region and around the world, such as national and state government departments, national DESD committees and non-governmental agencies, will also find the document useful.

Since the ESD indicator development process requires the participation of stakeholders across different sectors, both the *Guidelines* and *Quick Guide* have been developed with the assumption that persons with diverse backgrounds will be involved. This resource aims to facilitate collaboration by highlighting the key elements of a multi-stakeholder development process.

C. Why was the Quick Guide developed?

The *Quick Guide* was developed:

- i. To provide those with interest in the area of indicators with an overview of the following topics:
 - The UN DESD
 - Indicators
 - National and regional reporting during the DESD
 - The practical role of UNESCO National Commissions and UNESCO Offices in developing ESD indicators
 - The ESD indicator and data collection process
- ii. To provide those developing ESD indicators with a map to assist in navigating through the *Guidelines* in a more efficient manner
- iii. To provide a document that highlights the main tools for indicator planning.

ESD stakeholders have different levels of knowledge and interest regarding indicators. Some may be familiar with key ESD indicator issues and have competency to engage in the dialogue necessary for planning and development. Others might need more in-depth information on background and specialist issues about how to plan and develop a national ESD indicator framework. The *Guidelines* and the *Quick Guide* have been developed with these differences in mind, aiming to provide a practical document for all stakeholders regardless of their previous experiences or role in the indicator development process. The *Guidelines* can assist those who need more specific information, and the *Quick Guide* can assist those who just want an overview or to know where they can find detailed information on certain aspects of the indicator development process.

D. Who developed the *Quick Guide*?

Both the *Quick Guide* and *Guidelines* are products of the “Asia-Pacific DESD Indicators Project,” a collaborative effort led through UNESCO Bangkok with assistance from the Commission on Education and Communication (CEC) of the World Conservation Union (IUCN) facilitated by Macquarie University (MU) in Australia. The project was initiated as a response to the United Nations DESD International Implementation Scheme’s call to develop suitable and relevant indicators at all levels from the beginning of the UN Decade in 2005. Approximately 80 individuals contributed to the project via an electronic e-list and in person by either: 1) identifying and sharing key ESD indicator experiences and collaborating on ideas related to ESD indicator approaches and types; or 2) identifying the DESD priorities of UNESCO Member States in the Asia-Pacific and the roles of UNESCO National Commissions in developing ESD indicators at the national level. These actions were carried out by the ESD Expert Team and the Guidelines Review Team, respectively (see Appendix 2 and 3 of the *Guidelines*).

The United Nations Decade of Education for Sustainable Development (DESD)

The United Nations Decade of Education for Sustainable Development (DESD) (2005-2014), aims to integrate the principles of sustainable development into all areas of learning. It envisions a world where everyone has the opportunity to benefit from learning that motivates societal change. Throughout the Decade, governments are encouraged to incorporate ESD within education systems, strategies and development plans, as well as promote public awareness of wider participation in these activities. The objectives of the DESD are (UNESCO, 2005, p. 6):

- To facilitate networking, linkages, exchange and interaction among stakeholders in ESD;
- To foster an increased quality of teaching and learning in education for sustainable development;
- To help countries make progress towards and attain the Millennium Development Goals through ESD efforts; and
- To provide countries with new opportunities to incorporate ESD into education reform efforts.

Monitoring and evaluation play a crucial role in assessing and re-orienting ESD programmes throughout the Asia-Pacific (UNESCO, 2005). In addition, identifying change in priority areas ensures that ESD policies, programmes and activities being implemented during the DESD continuously remain relevant and effective (UNESCO Asia and Pacific Regional Bureau for Education, 2005).

Eight Key Messages from the Guidelines



Indicator types: Countries can show different types of progress depending on which type of indicators they use.

Different indicator types give different results. Understanding which types of indicators are available is important. In addition, moving beyond what one already knows and learning from others is key to developing knowledge about ESD indicators.

Indicator types differ in why they are used and, therefore, what they assess. Table 1 highlights the different indicator functions, along with an example of each indicator type for teacher education.

Indicator categories assist stakeholders to think about the various stages of ESD progress: the ESD starting point, the increasing number of activities during the DESD, the achievements made and the communication of these achievements. There are three categories:

- i. **Status Indicators:** assess variables that determine the position or standing of ESD in a country. *Baseline* indicator types belong to this category;
- ii. **Facilitative Indicators:** assess variables that assist, support or encourage engagement with ESD. *Context, process, and learning* indicator types belong to this category; and
- iii. **Effect Indicators:** assess variables relating to initial, medium and long-term achievements during the DESD. *Output, outcome, impact* and performance indicators belong to this category.

Table 1: Indicator Types Using Teacher Education as an Example

	Indicator Type	Function	Indicator Example
Status	Baseline	To identify the status of the overall ESD picture	<i>% of new teachers currently receiving pre-service training in ESD</i>
	Context	To identify the existence of ESD support systems	<i>National education policy exists that requires pre-service teacher education courses to provide training in ESD</i>
Facilitative	Process	To identify the existence of ESD processes and activities	<i>All pre-service teacher education courses provide training on ESD-related content and pedagogy</i>
	Learning	To promote learning and reflection on ESD	<i>Lessons learned in the process of training pre-service teachers in ESD are captured</i>
Effect	Output	To assess outputs such as tools and learning resources, and the immediate results of an activity	<i>% of new teachers certified as having received pre-service training in ESD</i>
	Outcome	To assess outcomes related to changes or improvements that result from ESD efforts	<i>% of new teachers using ESD-related content and pedagogy in the classroom</i>
	Impact	To assess impacts that result from ESD efforts	<i>Learners use sustainable practices in daily life</i>
	Performance	To assess the change in the status of the overall ESD picture in a region or country	<i>Increase in the number of new teachers receiving pre-service training</i>

(Tilbury & Janousek, 2006)

Box 1: SMART Conditions¹

Practitioners often develop indicators to meet the SMART conditions; that is, indicators which are:

- S Specific
- M Measurable
- A Attainable
- R Realistic
- T Time-bound

The above indicator types are listed simply as a guide. Consideration should be given to the relevance of each indicator type with regards to a country's specific needs. In this sense, it may not be necessary to incorporate all indicator types into a national ESD indicator framework.

Choosing appropriate ESD indicators for a national monitoring system requires that countries consider questions such as: *What does the indicator assess? Why would I use it? What are its benefits? and What are its limitations?* (See Table 2 on pp. 36-37 of the *Guidelines*.) Benefits and limitations of the different indicator types are an important consideration in determining the suitability of an indicator. There are many different criteria available to stakeholders to assess suitability. For instance, some criteria of interest might be:

¹ The concept of SMART Indicators is widely used and accepted by UNESCO and other organizations as a long-standing approach to indicator assessment. For general information on SMART indicator conditions, see the Global Environmental Facility (2006).

- Is the indicator relevant to national ESD goals and priorities?
- How well does the indicator suit the purposes of assessment?
- Is the data collected reliable?
- How easy is the indicator or data collected to understand?
- Is the indicator comparable?
- What is the cost/benefit ratio or convenience²/benefit ratio?

These criteria were adapted from the work undertaken by the UN Economic Commission for Europe (UNECE) Expert Group (2005) and Huckle (2006a, b & c). See Box 1 for another set of conditions to assist with the selection of indicators.

(Guidelines Section 7A: Distinguishing ESD Indicator Types and Guidelines Section 7B: Choosing Appropriate ESD Indicator Types for a National Framework)



Priorities, goals and targets: Indicators are most useful to stakeholders when developed by breaking down broad goals and priorities into specific targets and then using these targets to produce indicators of progress.

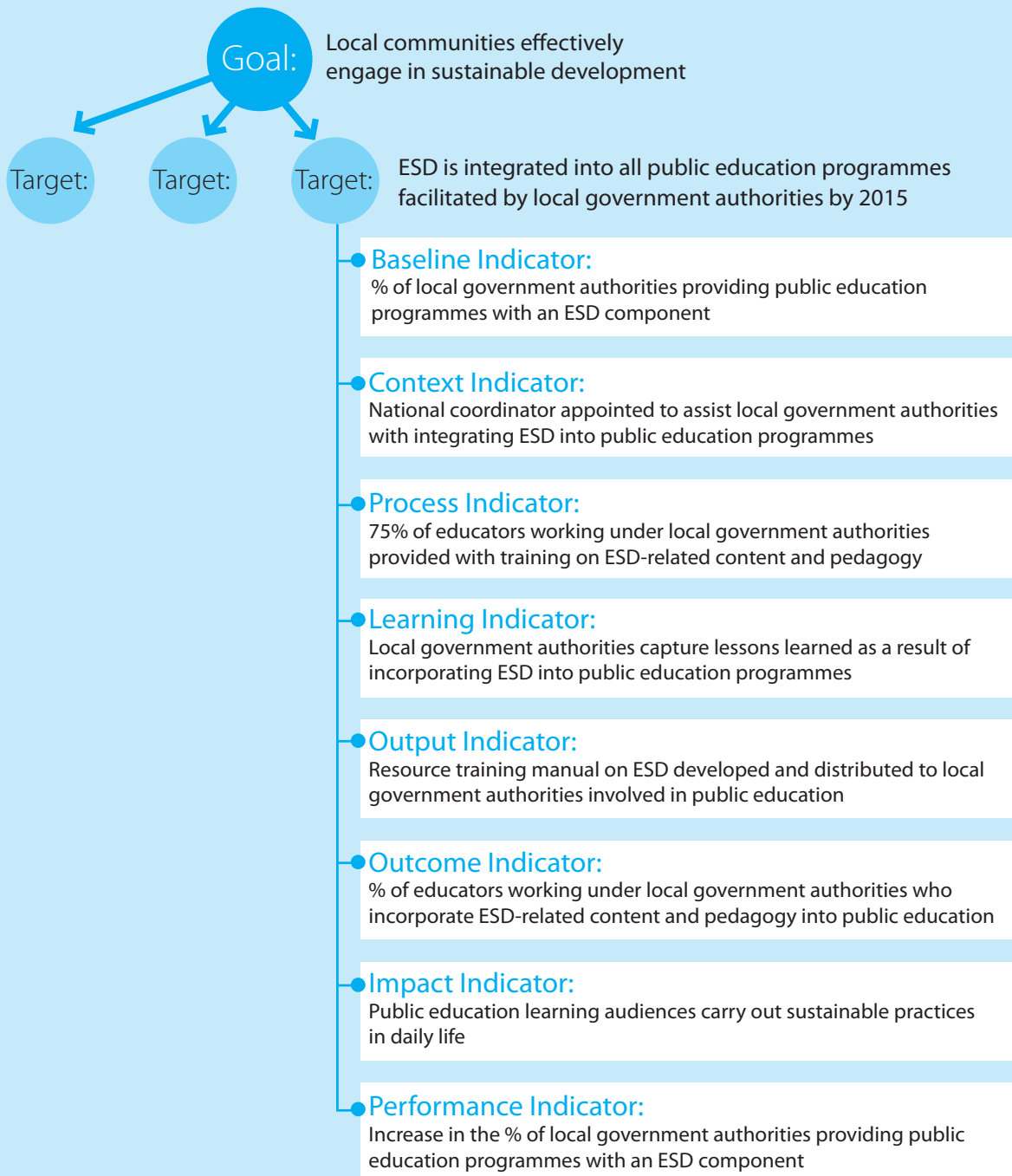
Defining clear goals and priorities is a key foundation for the development of relevant and meaningful indicators. As such, prior to developing indicators and establishing targets, UNESCO Member States will need to clearly identify their national ESD goals and priorities. It is important when considering ESD goals and priorities to involve relevant stakeholders in the process from a very early stage and to keep them involved throughout the indicator development process.

Once ESD goals and priorities have been established, it is then possible to identify related targets. One goal may have a number of associated targets (see Figure 1). Targets include specific information (i.e. a target date and number to be achieved) and link indicators to specific ESD goals and national priorities. When developing indicators from targets, it is helpful to have an idea of what some of the possible outcomes of these targets might be without closing the door to any unforeseen outcomes.

(Guidelines Section 4: Asia-Pacific Goals and Priorities for the DESD and Guidelines Section 8: The ESD Indicator Development Process)

² Convenience in terms of development, monitoring, application, interpretation and adaptation.

Figure 1: Moving from ESD Goals to Indicators³



³ The indicators in Figure 1 are simply examples. UNESCO Member States will establish their actual indicator framework based on their own national ESD goals and priorities.



A national indicator framework: Each country needs to develop a national framework that is relevant to its unique situation. However, some common points of interest may exist that could be addressed at the regional level.

Differing contexts, needs and experiences are a reality in the Asia-Pacific region. This diversity should be respected and accommodated when developing ESD indicators. As such, a one-size-fits-all indicator framework may not be the best approach for countries in the Asia-Pacific region. However, there could be specific issues or focuses which may provide common points of interest between national and regional reporting. Consider asking “*What national and/or regional platforms currently exist for compiling and presenting information for monitoring and advocacy purposes?*” Given that regional reporting requirements may affect national reporting processes, developing regional reporting formats can (and probably should) be completed in conjunction with the development of national reporting systems.

(Guidelines Section 4: Asia-Pacific Goals and Priorities for the DESD and Guidelines Section 10: National and Regional Reporting of ESD)



Data collection: Developing national ESD indicators goes hand in hand with the data collection process. Countries should begin thinking about the data collection process as early as possible.

Developing indicators with data collection in mind enables stakeholders to consider the practicality of gathering information for each indicator and identify data collection needs. In addition, collecting data as soon as the indicators are developed assists to embed monitoring processes within ESD activities and ensures that information derived from the process is considered during policy-making cycles. Periodic and timely coordination will also enable UNESCO Member States to learn and build the capacity for achieving national ESD targets and goals.

Table 2 provides examples of several potential methods for collecting data. Member States across the Asia-Pacific region will use different methods reflecting their diverse needs and experiences (see Appendix 11 of the *Guidelines* for a description of these methods).

Table 2: Quantitative and Qualitative Data Collection Methods

Methods of Data Collection	
Quantitative data	Qualitative data
<ul style="list-style-type: none"> • Administrative data collection <ul style="list-style-type: none"> - financial data - performance data - resource allocation - school census • Surveys and questionnaires <ul style="list-style-type: none"> - door-to-door - election-type polls - national census - phone interviews - school/teacher interviews 	<ul style="list-style-type: none"> • Case studies • Content analysis • Focus groups • Interviews (individual, community) • Observations • Research (action research) • School inspections (formal education) • Story-telling

Table 3: Example of an Indicator Planning Tool for Data Collection

Education for Sustainable Development Indicators	How often should the data be collected?	What data is needed to assess or calculate the indicator?
ESD Target: ESD is integrated into all public education programmes facilitated by local government authorities by 2015		
National coordinator appointed to assist local government authorities with integrating ESD into public education programmes (Context)	Once (checklist)	<ul style="list-style-type: none"> • Confirmation of appointment of a national ESD coordinator for non-formal education • The scope of their work

After having identified the most appropriate data collection methods, the next step is to form a comprehensive plan for data collection, analysis and programme improvement. An indicator planning tool (see table 3)⁴ can guide stakeholders in the planning process, assisting to determine who needs to be involved and when. In particular, by reviewing each indicator on its own, stakeholders can consider:

- How often will the data be collected?
- What data is needed to calculate or analyze the indicator?
- From where (or whom) will the data be obtained?
- Who is responsible for collecting and collating this data?

UNESCO Member States can also adapt this instrument to their own national monitoring needs.

(Guidelines Section 9: Collecting New and Existing Data for ESD Indicators)

Where will the data come from?	How will the data be collected?	Who will be responsible for the data collection?
Ministry of Environment or the Ministry of Education	Survey or interview	National DESD Committee or Data Collection Working Group

⁴ The *indicator planning tool* is one example of an instrument that UNESCO Member States can develop and adapt to guide planning for data collection. A template for this tool can be found in Appendix 12 of the *Guidelines* and is available in electronic form on the Asia-Pacific ESD Monitoring Project webpage (<http://www.unescobkk.org/education/esd/monitoring>).



Role of UNESCO National Commissions and UNESCO Offices: As vital partners at the national level, UNESCO National Commissions and Offices are the initiators and catalysts of the Decade.

UNESCO National Commissions and UNESCO Offices have taken on a significant role in promoting and supporting the DESD. Specifically, the “Asia-Pacific DESD Indicators Project” asked the Guidelines Review Team participants to clarify and describe the role National Commissions play or will play in developing national ESD indicators. Five distinct roles were identified (see p. 19 of the *Guidelines*). In summary, many National Commissions assist ESD indicator development by coordinating the development process. Others form parts of groups that lead monitoring and assessment and others facilitate the development process across all sectors. In general, most National Commissions and UNESCO Offices will play a substantial role in coordinating the development of national ESD indicators and frameworks.

The role of UNESCO Offices came under discussion during an indicators capacity-building workshop held in Bangkok in April 2007. Participants recognized that UNESCO Offices will play different roles based on proximity. For example, National or Cluster Offices located in-country may play a more central role than Cluster Offices located in a neighboring country.

(Guidelines Section 5: UNESCO National Commissions and UNESCO Offices: Role in Monitoring and Assessment During the DESD)



Stakeholder capacity building: National stakeholders need practical assistance in developing indicators and monitoring systems.

The ESD indicator development process provides an important opportunity to invite and engage national stakeholders to participate in the DESD. Developing effective ESD indicators requires careful consideration of what constitutes an ‘appropriate’ process within each country. Often, processes are undertaken only to result in little or no change due to a lack of commitment by stakeholders. As such, stakeholders need practical assistance in the form of capacity building or expertise to be able to effectively participate in the development process.

Participatory learning processes provide practical assistance to stakeholders who, as a result, will be engaged and motivated to make long-lasting decisions and actions (Tilbury & Cooke, 2005). Through participation in activities such as capacity-building workshops, stakeholders can develop confidence and build skills that assist them to make informed decisions about ESD indicators.

(Guidelines Section 8: The ESD Indicator Development Process)



Box 2: Examples of Different Indicators

Sustainable Development Indicator: the percentage of the population with access to safe drinking water

Education Indicator: the percentage of children aged 5 to 10 years enrolled in school

ESD Indicator: the percentage of teachers incorporating ESD into lesson plans

Indicator linkages: There are inter-linkages between sustainable development indicators, education indicators and ESD indicators.

Sustainable development indicators monitor change in areas such as environment, employment and gender equity. Education indicators monitor the capacity of the education system in school performance, test results, numeracy, literacy and national standards. ESD indicators consider information related to change in a country's ESD policies, programmes and actions, as well as the results of their implementation (see Box 2 for examples).

It will be important to identify related initiatives such as Education for All or the Millennium Development Goals, which have already produced data collection and monitoring systems that can provide information relevant to ESD indicators (see Box 3). Stakeholders should consider linking efforts with these initiatives, where appropriate.

(Guidelines Section 8: The ESD Indicator Development Process)



Box 3: Linking EFA Goals

Initiatives such as EFA have similar goals to ESD in areas such as early childhood development and education, access to education, participation, financial resources, human resources, quality of education, efficiency, learning achievements and literacy.

(UNESCO Institute for Statistics, 2001)

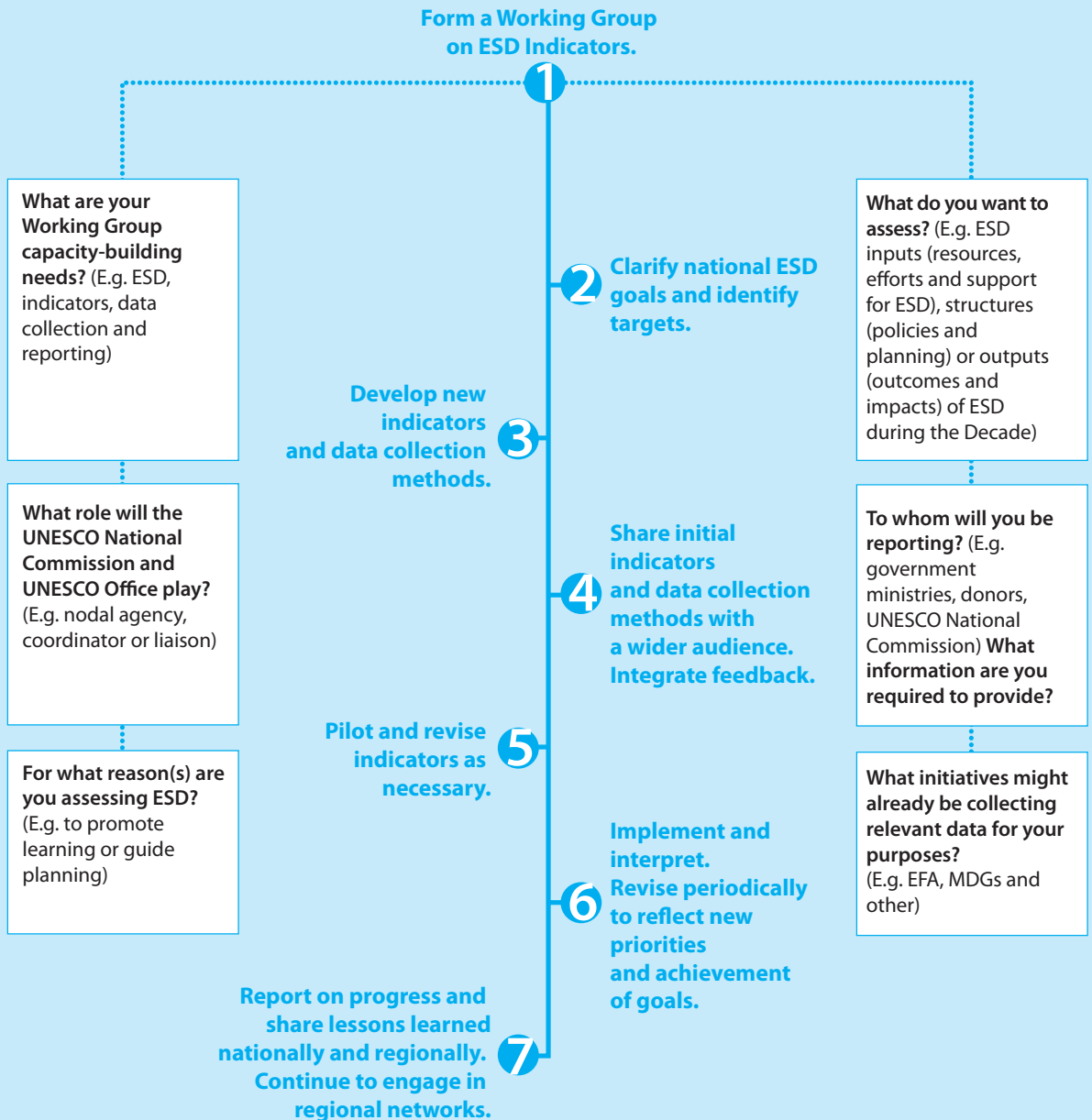
Indicator development steps: Developing an indicator framework involves various steps. Answering a set of questions before embarking on the process is important.

There are at least seven steps in the ESD indicator development process. During each of these steps, it is necessary to assess and focus direction by asking questions such as, "What are your working group capacity-building needs?" These steps contribute to developing a national ESD indicator framework and are summarized in Figure 2 along with key questions to guide the development process. Similarly, Box 4 provides a summary of key elements to consider when developing an indicator framework. These key elements also assist in answering important framework questions such as, "How can we ensure that everyone who wants to has the opportunity and support necessary to participate actively in the development of ESD indicators?"

In addition, a basic checklist for the ESD indicator development process can be developed (see Table 4). It helps to ensure that both the key elements (Box 4) and the indicator development stages (Figure 2) are considered.

(Guidelines Section 8: The ESD Indicator Development Process and Guidelines Section 11: In summary)

Figure 2: Steps Toward Developing a National ESD Monitoring System and Key Questions for Consideration⁵



⁵ The specific body that develops national ESD goals may differ from country to country. For example, some UNESCO Member States may choose to develop goals through a national DESD committee, the National Commission for UNESCO or a working group on indicators. Regardless of the group who develops the national goals for ESD, it is highly recommended that those tasked with developing indicators clarify each national ESD goal in Step 2 in order to develop a shared understanding and a strong foundation for moving forward with the development of targets and indicators.



Box 4: Summary of Key Elements to Consider When Developing National ESD Indicators

With little work available in the field of ESD indicators, the following key elements are based on similar experiences toward developing national ESD strategies:

Multi-stakeholder approach: The process actively engages multiple stakeholders from across sectors. The process specifically includes participation from decision-makers who are in a position to support and implement the outcomes of the process.

Participation: The process is participatory in a sense which goes beyond pure consultation to involve participants in decision-making and taking action.

Combination of top-down and bottom-up approaches: As both top-down and bottom-up approaches have strengths and weaknesses when used alone, the two approaches combined provide stronger outcomes. A top-down approach capitalizes on the benefits of strong leadership support and commitment to a national monitoring system. A bottom-up approach ensures that on-the-ground support for the system exists.

Facilitation: The main role for those who lead the development of an indicator framework is to be facilitators of the process. The focus is on providing the participants with encouragement, support and a structural base to ensure all of the above points can be achieved.

Transparency: The process being used to develop a national framework of indicators is clearly articulated and open to public input at all stages.

Capacity-building for decision-making: Participation in the development process provides participants with opportunities to increase their knowledge, skills and ability to be involved in decision-making processes.

The key elements above help stakeholders consider the following core questions for a participatory development process:

How can we effectively learn from and account for the vast expanse of cultural diversity, opinions and experiences within the Asia-Pacific region when developing ESD indicators?

How can we ensure that all who want to be involved in the ESD indicator development process have the opportunity and support to actively participate?

How can we ensure that those involved in ESD indicator development feel they have contributed equally and are part owners of the process?

(Adapted from Tilbury & Cooke, 2005, p. 83)

Table 4: Checklist for the ESD Indicator Development Process⁶

<input checked="" type="checkbox"/>	Activity
<input type="checkbox"/>	1. Identify and invite stakeholders at the national level to form part of a Working Group on ESD Indicators.
<input type="checkbox"/>	2. Determine the roles and responsibilities of the Working Group. Encourage a bottom-up and top-down approach to developing indicators.
<input type="checkbox"/>	3. Make the process transparent by determining clear lines of communication, internal and external to the process. Predict and prepare for potential conflicts related to diverse interests.
<input type="checkbox"/>	4. Encourage long-term participation through knowledge-building activities, reflecting on diverse values and perspectives, capacity-building exercises, and empowering stakeholders to take part in decision-making.
<input type="checkbox"/>	5. Come to a consensus on a common understanding of ESD.
<input type="checkbox"/>	6. Define national ESD priorities and goals for the DESD (i.e. develop a national ESD action plan).
<input type="checkbox"/>	7. Determine stakeholder and donor needs for monitoring and assessment.
<input type="checkbox"/>	8. Identify the function(s) and approach of your ESD indicator framework (e.g. quality control vs. learning and improvement).
<input type="checkbox"/>	9. Clarify understanding of the different indicator types and their functions.
<input type="checkbox"/>	10. Develop indicators that best align with national ESD priorities and goals. Take into account related initiatives from which indicators can be used in addition to practical data collection.
<input type="checkbox"/>	11. Engage a wider audience. Seek feedback and further input into your indicator framework.
<input type="checkbox"/>	12. Apply the indicators to determine usefulness in practice. Revise and adapt periodically as per DESD priorities.

⁶ Stakeholders may wish to adapt this checklist to reflect the ESD indicator development needs in their own national context.

In Summary

The DESD provides an important opportunity to enhance the profile of ESD in formal, non-formal and informal learning spaces, as well as to assist in the transformation to sustainable societies worldwide. Along with efforts to promote and integrate ESD at all levels, monitoring and assessment of progress is a key strategy for advancing DESD efforts. In particular, UNESCO has recognized the need for countries to develop suitable and relevant indicators from the start of the Decade.

Following the development of indicators, selected Member States are expected to pilot their national ESD indicators, data collection and reporting mechanisms in 2008 with additional countries doing so throughout the Decade. Piloting of ESD indicators in 2008 will provide important feedback as to their practical utility across demographic, geographic and educational contexts. Continuous learning about ESD, indicators and data collection methods will be necessary. An effective monitoring system is one that not only assesses progress, but builds knowledge about *indicators* of progress and achievement during the UN Decade of ESD.

References

Global Environmental Facility. 2006. *Monitoring and Evaluation: Measuring Results the SMART Way*. <http://gefweb.org/MonitoringandEvaluation/MEPoliciesProcedures/MEPIndicatorsmepindicators.html> (Accessed 28 August, 2006)

Huckle, J. 2006a. *A UK Indicator of the Impact of Formal Learning on Knowledge and Awareness of Sustainable Development*. Proposals from the Sustainable Development Commission. http://john.huckle.org.uk/publications_downloads.jsp (Accessed 24 July, 2006)

Huckle, J. 2006b. *Indicators for Education for Sustainable Development: Engaging the Debate* [stimulus material for breakout groups]. Presented at Indicators for Education for Sustainable Development: Engaging the Debate, the Bath Royal Literary & Scientific Institute, UK, 17 March. <http://www.bath.ac.uk/cree/resources/esrcesd/huckle.pdf> (Accessed 27 April, 2006)

Huckle, J. 2006c. *Towards an ESD Indicator for the UK* [powerpoint]. Presented at Indicators for Education for Sustainable Development: Engaging the Debate, the Bath Royal Literary & Scientific Institute, UK, 17 March. <http://www.bath.ac.uk/cree/resources/esrcesd/huckleppt.pdf> (Accessed 27 April, 2006)

Tilbury, D., & Cooke, K. 2005. *A National Review of Environmental Education and Its Contribution to Sustainability in Australia: Frameworks for Sustainability*. Canberra: Australian Government Department of the Environment and Heritage and Australian Research Institute in Education for Sustainability.

Tilbury, D., & Janousek, S. 2006. *Development of a National Approach to Monitoring, Assessment and Reporting on the Decade of Education for Sustainable Development – Stage 1: Identification of National Indicators*. Report submitted by the Australian Research Institute in Education for Sustainability to the Australian Government Department of the Environment and Heritage.

UNECE Expert Group. 2005. *UNECE Expert Group on Indicators for Education for Sustainable Development First Meeting Report*, 26-28 September. Ede, The Netherlands: UNECE. <http://www.unece.org/env/esd/> (Accessed 13 July, 2006)

UNESCO. 2005. *United Nations Decade of Education for Sustainable Development (2004-2015): International Implementation Scheme*. Paris: UNESCO.

UNESCO Asia and Pacific Regional Bureau for Education. 2005. *A Situational Analysis of Education for Sustainable Development in the Asia-Pacific Region*. Bangkok: UNESCO.

UNESCO Asia and Pacific Regional Bureau for Education. 2007. *Asia-Pacific Guidelines for the Development of National ESD Indicators*. Bangkok: UNESCO.

UNESCO Institute for Statistics. 2001. Education for All Indicators Expert Group Meeting, UNESCO Paris, 25-26 June. Report on the meeting and proposals for the future development of EFA.



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