

**Poverty Environmental Mainstreaming Training
Handbook for District Development Plans Elaboration**

UNDP/UNEP Poverty Environment Initiative (PEI)-Phase I,
Tajikistan

Poverty-Environment (P-E) Mainstreaming Training Handbook

Table of Contents

Glossary.....	3
1 Introduction.....	4
1.1 What is Poverty-Environmental Mainstreaming?.....	4
1.2 Why is Poverty-Environmental Mainstreaming Necessary?.....	4
1.3 Responsibilities for poverty-environmental mainstreaming.....	10
2. Review of Current Situation.....	14
2.1 Review of Current Situation Questions.....	14
3. Setting Environmental Objectives.....	16
3.1 Problem Tree.....	16
3.2 Objective Tree.....	18
3.3 Option Analysis.....	19
4. Environmental Overview.....	22
4.1 What is an Environmental Overview?.....	22
4.2 How to Conduct an Environmental Overview?.....	22
4.3 Results of Environmental Overview.....	25
5. Environmental Indicators.....	26
5.1 How to Set Them and Who With?.....	26
5.2 The Process.....	27
5.3 How to Construct Indicators?.....	28
5.4 Identifying Data Sources.....	29
5.5 Examples of Indicators.....	30
6. Environmental Screening of District/Jamoat Projects.....	32
6.1 The Environmental Screening Checklist.....	32
6.2 Results.....	33
7. Environmental Impact Assessment.....	36
7.1 What is an EIA?.....	36
7.2 Objectives.....	36
7.3 The Steps.....	37
7.4 Results.....	38
Appendix – Group Exercises.....	39
Exercise 1: The Problem Tree.....	39
Exercise 2: The Objective Tree.....	39
Exercise 3: Options Analysis.....	39
Exercise 4: Environmental Review.....	40
Exercise 5: Environmental indicators.....	40

Glossary

PE-I	Poverty Environment Initiative
PE	Poverty Environment
MDG	Millennium Development Goals
OECD	Organisation for Economic Co-operation and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
DDP	District Development Plans
EIG	Environmental Initiative Group
EIA	Environmental Impact Assessment
PRS	Poverty Reduction Strategy

1 Introduction

1.1 What is Poverty-Environmental Mainstreaming?

Definition: Poverty-Environment Mainstreaming

Poverty-environment mainstreaming is an iterative process of integrating poverty-environment linkages into policymaking, budgeting and implementation processes at national, sector and sub-national levels. It is a multi-year, multi-stakeholder effort that entails working with government actors (head of state's office, environment, finance and planning bodies, sector and sub-national bodies, political parties and parliament, national statistics office and judicial system), non-governmental actors (civil society, academia, business and industry, general public and communities, and the media) and development actors.

Mainstreaming Poverty-Environment Linkages Into Development Planning: A Handbook For Practitioners - Undp-Unep Poverty-Environment Initiative (2009)

Poverty-Environmental mainstreaming is the process of systematically integrating the linkage between poverty and environment into all domains of Government from a national level to a District/Jamoat level to a village level. It involves a committed process of change in the culture and practices of institutions for environmental sustainability as a means and end towards economic growth.

In a country where the environment has been successfully mainstreamed in the national and sub-national policies and programs, the environment is given as much consideration as any other social and economic issues. There exists a system of checks and balances to ensure that environmental issues are considered at all stages of new projects, plans, programs or policies.

The objective of this training handbook is to elaborate each specific entry points of poverty-environmental mainstreaming in the District Development Plans (DDPs). This builds on the draft Manual on Elaboration and Implementation of the Social and Economic Development Programs of Districts in the Republic of Tajikistan which consist of brief guideline on poverty-environmental mainstreaming. The handbook focuses on the question of "how to mainstream poverty-environment" in the planning process. While developing this, the principles of simplicity, practical user-friendliness and harmonization with the sub-national planning methodology was applied. This handbook will be pilot tested on the ground in 14 districts in the Sughd region of Tajikistan from January till June, 2011.

1.2 Why is Poverty-Environmental Mainstreaming Necessary?

The global environmental situation is stark. The Millennium Ecosystem Assessment shows that nearly two-thirds of the ecosystems examined are being degraded or used unsustainably. The Millennium Declaration warns that if we do not act to contain environmental damage and prevent future harm, we will inflict irreversible damage on the ecosystems that support human livelihoods and well-being. Now, more than any time in our global past, we are focusing on *sustainable* development, and now is

the time to redress imbalances and bring environmental considerations to the fore of policy making.

Definition: Sustainable Development

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It includes economic, environmental, and social sustainability, which can be achieved by rationally managing physical, natural and human capital.

UNDG: "Mainstreaming Environmental Sustainability in Country Analysis and the UNDAF", 2009

On the positive side, there are many advantages in engaging with the environment via poverty-environment mainstreaming. The potential for economic growth is arguably the biggest reason, closely followed by the potential improvements to health and well-being of those living in poverty. Ultimately the achievement of these elements will lead to sustainable development enabling the demands of the MDGs and their key aims of eradicating extreme poverty and hunger.

Why poverty-environment mainstreaming is important for Tajikistan

More than 70% of the population of Tajikistan is living in rural areas. According to the Poverty Reduction Strategy 2010-2012, 53% of the population lives below the poverty line (*Tajikistan Living Standards Survey, 2007*), and 17.1% live in absolute poverty. Poverty continues to be a predominantly rural phenomenon.

While only 7% of the territory is considered to be suitable for economic land use, about two thirds of Tajikistan's population living in rural areas depends on agriculture for their livelihoods. At the same time, the main environmental problems are related to unsustainable agriculture practices, resulting in biodiversity loss and land degradation, leading again to low agricultural productivity and consequent lower levels of generated income. Other key poverty – environment issues are lack of reliable energy supply, high vulnerability to natural disasters and climate change impacts, and water and food insecurity.

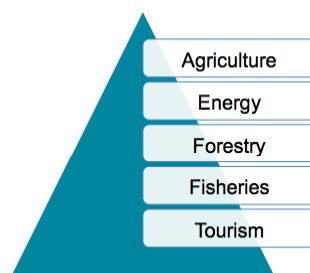
Poverty Environment Mainstreaming Process in Tajikistan

Mainstreaming Poverty-Environment into planning and budgeting process is relatively new concept in Tajikistan. Initially, the concept of poverty-environment will be mainstreamed as part of the elaboration of seven new district development plans (DDPs) in the Sughd region of Tajikistan from December 2010 to June 2011. During the same time period, seven other districts where DDPs will be revised following the newly issued District Development Plan Guideline will also ensure poverty-environment mainstreaming. Depending on the lessons learned and feedback received from the various concerned stakeholders a revised set of sector specific guideline will be issued in July, 2011 which all sectors are expected to follow. It is to be mentioned that poverty-environmental mainstreaming also implied mainstreaming of climate change issues. However, more CC specific inputs will be included in the next version of the Handbook

Link between the environment and the economy

The quality of the environment contributes both directly and indirectly to economic development and employment. These contributions are particularly important in developing countries and can have a significant impact on a country's GDP.

In general terms, the key sectors impacted by the environment are:



Each of these sectors relies on natural resources, natural ecosystems, natural stocks, biodiversity and natural beauty for success. If the quality of the environment is allowed to disintegrate, there is a direct correlation between the environmental damage and a reduction of revenues. Similarly, within these key sectors lie many opportunities to be gained if poverty-mainstreaming is put into place; increased employment being one key potential benefit.

EXAMPLES – The environment and GDP

- In Brazil, the most recent agricultural census showed that one rural job is created for every 8 hectares cultivated by small farmers, whereas large-scale mechanized farms provide only one job for every 67 hectares, on average.
- In Brazil, employment in biofuels or biomass is estimated at half a million jobs.
- In China, employment in solar thermal and biofuels/biomass is estimated to account for 600,000 and 226,000 jobs, respectively.
- In India, replacing traditional cooking stoves with advanced biomass cooking technologies in 9 million households could create 150,000 jobs, not including jobs generated in biomass collection and biomass plantations. In New Delhi, the introduction by 2009 of 6,100 buses powered by compressed natural gas is expected to create 18,000 new jobs.
- In Papua New Guinea some 23% of the more than 130,000 rural households earn their income from fishing.
- In the Pacific Islands, large numbers of women gain economic benefits from fishing either directly or indirectly by working in related jobs such as selling fish, exporting and marketing.

Contribution of the environment in meeting the MDGs. Source: Mainstreaming Poverty-Environment Linkages Into Development Planning: A Handbook For Practitioners - Undp-Unep Poverty-Environment Initiative (2009)

In Tajikistan, the key income-generating sectors that are impacted by the environment are: agriculture, forestry and energy.

As with the rest of Central Asia, agriculture plays a more important role in the economy of the Tajikistan than it does in more developed market economies. An estimated 24% of GDP, 66% of employment, 26% of exports and 39% of tax revenues

makes agriculture a major component of the Tajik economy. 64% of the population depends on agriculture for their livelihoods. However, it is largely believed that this growth is unsustainable in the long run. Land degradation is a particular problem for Tajikistan. Caused by deforestation, desertification and erosion, land degradation adversely impacts farmers' ability to generate income and to escape poverty. With only 3% of Tajikistan's land covered in forest, falling below the desired level of 10% (Tajikistan Forestry Department) reforestation is key to reducing soil erosion.

An unreliable energy supply has a critical impact on Tajikistan's ability to generate income and for poor people to lift themselves out of poverty. Attempts to develop significant income-generating activities and to raise living standards in rural communities have largely failed in part due to the absence of a reliable electricity supply. Similarly, reduced access to electricity often means reduced access to water, sanitation, irrigation, health, and other social services whose provision requires adequate electric power supply (for pumping); this has a direct effect on the population's ability to work efficiently. An increase in electricity tariffs may push the low-income households to use of off-grid resources, such as coal, diesel-fired generators, firewood, and dung resulting again to deforestation, greater air pollution (including greenhouse gas emissions), and increased incidence of respiratory and water-borne illnesses.

EXAMPLES – The environment and GDP

- In Cambodia, fisheries generate 10% of GDP.
- In Ghana, the national costs of environmental degradation are estimated at 9.6% of GDP.
- In Tunisia, the gross cost of environmental damage is equivalent to 2.7% of GDP, while in Egypt, this cost amounts to 5.4% of GDP.
- In West Africa, fisheries can represent up to 15-17% of national GDP and up to 25-30% of export revenues.

Contribution of the environment in meeting the MDGs. Source: Mainstreaming Poverty-Environment Linkages Into Development Planning: A Handbook For Practitioners - Undp-Unep Poverty-Environment Initiative (2009)

The following two examples show the economic worth of addressing environmental risks and opportunities. The first example shows the economic impact of resolving decreased water supplies; and, the second example shows the potential increased revenue due to repairing environmental damage.

CASE STUDY - Nepal

About a third of the world's population lives in countries with moderate to high water stress, with disproportionate impacts on the poor. With current projected human population growth, industrial development and expansion of irrigated agriculture in the next two decades, water demand will rise to levels that will make the task of providing water for human sustenance more difficult. In Nepal, low-cost drip irrigation has proven to be a win-win solution for resource-poor farmers and the environment. For as little as \$13 per drip irrigation kit, farmers can expect improvements in yield of 20–70 per cent by delivering the right amount of water to crops at the right time while saving water for other purposes. Over a three-year period, a farmer's investment can generate incremental gains worth \$570.

SIWI (Stockholm International Water Institute). 2005. Making Water a Part of Economic Development: The Economic Benefits of Improved Water Management and Services

CASE STUDY - Cameroon

Located in a dry area of erratic rainfall, the Waza Logone flood plain is a highly productive ecosystem and a critical area for biodiversity. Some 130,000 people rely on the flood plain and its wetland resources for their basic income and subsistence. However, the flood plain has been degraded through major irrigation schemes implemented without due consideration of the impacts on wetland eco-systems. Pilot efforts to restore the ecosystem services provided by the flood plain have been carried out. Based on the results, experts estimate that full restoration of natural inundation patterns would yield incremental economic benefits ranging from \$1.1 million to \$2.3 million per year. This translates into \$50 of added economic value each year for each member of the local population dependent on the flood plain for livelihood.

Emerton, L. 2005. "Values and Rewards: Counting and Capturing Ecosystem Water Services for Sustainable Development." Water, Nature and Economics Technical Paper 1:43–47. Gland, Switzerland: International Union for Conservation of Nature.

Link between the environment and natural capital and wealth

If one was to consider a country's finances like that of a businesses balance sheet and income statement it becomes easy to see the importance of the environment not just in terms of potential revenue but also in terms of natural assets.

The revenue from positive poverty-environmental mainstreaming is outlined in the section above, so here we briefly look at the balance sheet side. A country's wealth is contingent on the assets it has available to it. Developing countries are more reliant on their reserves of natural resources than more developed countries. The table below demonstrates the proportion of wealth that is linked to natural capital.

Income group	Natural capital		Produced capital		Intangible capital		Total
	\$ per capita	% share	\$ per capita	% share	\$ per capita	% share	
Low-income countries	1,925	26	1,174	16	4,434	59	7,532
Middle-income countries	3,496	13	5,347	19	18,773	68	27,616
High-income OECD countries	9,531	2	76,193	17	353,339	80	439,063
World	4,011	4	16,850	18	74,998	78	95,860

Figure 2: Distribution of natural wealth by type of capital and income group. Source: World Bank 2006. Note All dollars at nominal exchange rate. Oil States are excluded.

If Tajikistan's resources are reduced, polluted, damaged or destroyed then the country's natural capital is also reduced, as is the potential to earn revenues that are contingent on these assets.

Link between the environment and health and well-being

Environmental conditions play a huge part in the lives of the greater part of world populations having a direct impact on health, the provision of food and water, not to mention the ability of people to earn a living.

Environmental risks, such as occupational exposures to chemicals and indoor air pollution from household solid fuel use, play a role in more than 80% of the diseases regularly reported on by the World Health Organization. Globally, nearly a quarter of all deaths and of the world's total disease burden can be attributed to the

environment. As many as 13 million deaths could be prevented every year by making the environment healthier. [Prüss-Üstün, A., and C. Corvalan. 2006. Preventing Disease through Healthy Environments: Towards an Estimate of the Environmental Burden of Disease. Paris: World Health Organization.]

Currently in Tajikistan, as much as 40% of the water consumed is not potable and 41% of the population uses water from public utilities that is of a poor quality. Environmentally un-friendly systems of waste disposal deteriorate the quality of the country's water sources and lead to deterioration of the ecological condition of water, soil and life conditions of the population.

With more than half of the country's territory covered by high mountains above 3,000 metres, Tajikistan is particularly vulnerable to natural disasters, such as earthquakes, landslides, floods, avalanches and extreme climate conditions. According to UNDP 2007-2009 Disaster Risk Management Programme Document: (1) the country suffers on average nearly 500 disasters per year, which cause widespread damage to communities and social infrastructure, increasing household vulnerabilities and hampering development gains; and (2) these categories of environmental damages have an economic cost of 4.8% of gross domestic product (GDP), and they primarily affect the poor.

As part of Central Asia, Tajikistan is one of the climate change "hot spots" in the wider Eastern Europe and CIS region. The combined effect of observed climate change factors will be a decline in annual river flows despite expected exacerbated seasonal floods, and a consequent need to adjust reservoir operations and water networks. More frequent floods will adversely affect livelihood in the country already highly prone to natural disasters. Sectors mainly to be affected by climate change are water management, irrigated agriculture (consuming 94% of water), and energy (98% of the national energy is produced by the hydropower plants).

Link between the environment and supporting pro-poor growth and poverty reduction

The major country framework documents: the National Development Strategy (NDS) 2007–2015 and the Poverty Reduction Strategy (PRS) 2010-2012 (so called PRS3), identify promotion of environmental sustainability as one of the country's development priorities. They call in particular for increasing institutional capacity to promote environmental sustainability, for preventing and coping with natural disasters, sustainable use of natural resources, and for conserving and properly managing biodiversity and ecosystems.

The UN Development Assistance Framework (UNDAF) for 2010-2015, designed to support Tajikistan's development goals set in NDS and PRS, and the achievement of MDGs. UNDAF identifies four pillars / focus areas: (i) poverty reduction and governance, (ii) food and nutrition security, (iii) clean water, sustainable environment and energy, and (iv) quality basic services in health, education and social welfare for the most vulnerable.

Link between the environment and achieving the MDGs

Positive engagement with poverty-environmental mainstreaming is a key factor in meeting the Millennium Development Goals (MDG). Indeed, it is now widely accepted that failure to integrate environmental sustainability into planning processes will compromise our ability to achieve the MDGs, particularly the eradication of extreme poverty and hunger.

See the diagram below for how the environment links to the MDGs.

Goal	Poverty-environmental linkages
Health 4. Reduce child mortality 5. Improve maternal health 6. Combat HIV/AIDS, malaria and major diseases	<ul style="list-style-type: none"> Water- and sanitation-related diseases (such as diarrhea) and acute respiratory infections (primarily from indoor air pollution) are two of the leading causes of under-five child mortality. Damage to women's health from indoor air pollution or from carrying heavy loads of water and fuel wood can make women less fit for childbirth and at greater risk of complications during pregnancy. Malaria, annual killer of an estimated 1 million children under age five, may be exacerbated as a result of deforestation, loss of biodiversity and poor water management. Up to a quarter of the burden of disease worldwide is linked to environmental factors —primarily polluted air and water, lack of sanitation and vector-borne diseases; measures to prevent damage to health from environmental causes are as important, and often more cost-effective, than treatment of the resulting illnesses. Environmental risks, such as natural disasters, floods, droughts and the effects of ongoing climate change, affect people's health and can be life threatening.
7. Ensure Environmental Sustainability	<ul style="list-style-type: none"> Natural resources and sustainable environmental management contribute to economic development, public revenues, the creation of decent and productive work and poverty reduction.
8. Develop a global partnership for development	<ul style="list-style-type: none"> Developing countries, especially small island States, have special needs for development assistance, including increased capacity to adapt to climate change and to address other environmental challenges, such as water and waste management.

Figure 3: Contribution of the environment in meeting the MDGs. Source: *Mainstreaming Poverty-Environment Linkages Into Development Planning: A Handbook For Practitioners - Undp-Unep Poverty-Environment Initiative (2009)*

1.3 Responsibilities for poverty-environmental mainstreaming

Ensuring poverty-environment mainstreaming is the responsibility of many different parties. Below is illustrated some of the proposed responsibilities of various stakeholders.

Stakeholder	Roles and responsibilities
Committee for Environmental Protection	<ul style="list-style-type: none"> Act as a champion to mainstream environment at the national and decentralized levels Advocates for development of environmental laws and acts and ensure their implementation Oversight role in ensuring poverty environmental mainstreaming at the Rayon, District and Jamoat levels Monitoring implementation of poverty-environmental objectives as per the national and decentralized plans
Environmental Initiative Group	<ul style="list-style-type: none"> Ensure Vision and SWOT analysis done by the District Working Group takes environmental issues into consideration Setting environmental objectives at the district levels Environmental overview of sector specific objectives Ensure environmental representation in other Sector Working Group meetings

	<ul style="list-style-type: none"> • Setting environmental indicators • Monitoring implementation of poverty-environmental objectives • Pre-screening of environmental projects by sectors
Sector Working Group	<ul style="list-style-type: none"> • Specify and implement environmental objectives in their respective sector plans • Respond to the recommendations of Environmental Initiative Group provided during the elaboration of DDPs
The Oblast hukumat/MEDT	<ul style="list-style-type: none"> • Ensure that recommendations provided by the Environmental Initiative Group during the DDP elaboration process have been taken into account before the DDPs are forwarded to the Majlis of People's Deputies for final approval.
Sector District Project Approval Committee	<ul style="list-style-type: none"> • Scanning of proposal documents for EIA.
EIA Consultants	<ul style="list-style-type: none"> • Conduct EIA
Sector ministries	<ul style="list-style-type: none"> • Create and implement poverty-environmental objectives and monitor them
National statistics office	<ul style="list-style-type: none"> • Development, refinement of poverty-environment indicators • Collection of data • Capacity building of data collection
Civil society organizations	<ul style="list-style-type: none"> • Participation in stakeholder consultations • Watchdog role (promoting transparency and accountability) • Information collection related to poverty-environment indicator
General public	<ul style="list-style-type: none"> • Participation in stakeholder consultations • Provide knowledge of poverty-environmental issues at grass-roots levels
Media	<ul style="list-style-type: none"> • Shape the opinions of general public and decision makers • Encourage public involvement

The Environmental Initiative Group (EIG) consisting of agriculture, water and waste management among others (composition of experts within the Environmental Initiative Group will depend on specific nature of environmental/climate change problems that district concerned faces), will play the spearheading role during the pilot phase of December, 2010-June, 2011 DDP elaboration process. All parties devising project proposals (including the public sector) will be required to submit their proposals for an environmental impact assessment.

Although, during the pilot phase, the cost of the process of mainstreaming poverty-environment in terms of formulation of relevant plans will be covered by the Rural Growth Programme (RGP) and thereby the UNDP/UNEP Poverty-Environment Initiative (PEI), in the future, any associated cost related to poverty environmental mainstreaming in the planning should be part of the overall cost of the elaboration of district development plans in general, borne by the concerned district planning authority.

The below diagram illustrates the DDP process, as explained in the new DDP guideline, and the relevant entry points for poverty- environmental mainstreaming. Note that all entry points will involve a degree of public participation and

consultation. It may be useful to combine public participation in environment / poverty-environment mainstreaming with public participation within the development of the DDP itself. Combining public participation in the mainstreaming and DDP making process may enable consideration of possible suggestions for reformulation of the DDP within a single commenting and review process. As such it can reduce the costs related to public participation actions.

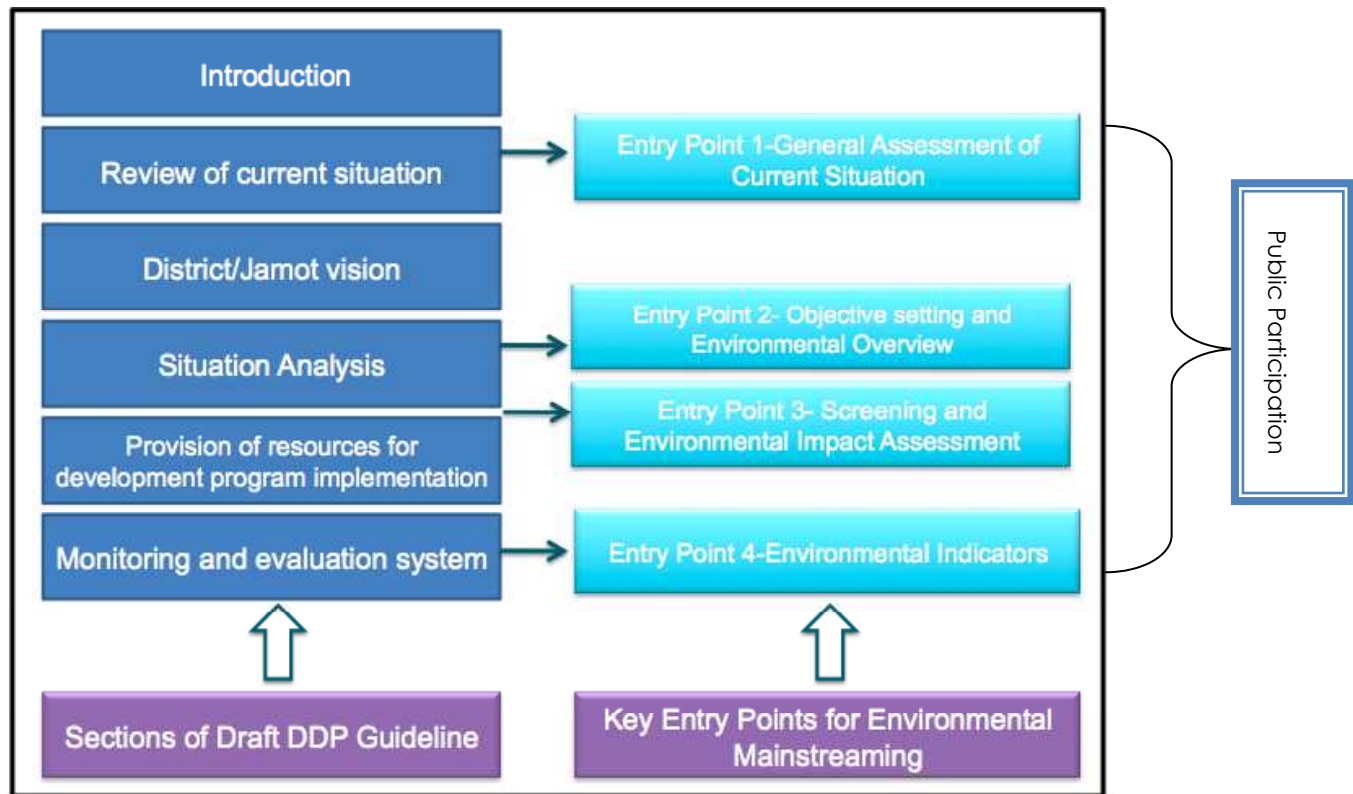
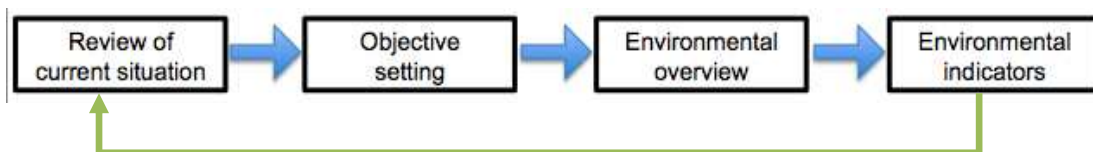
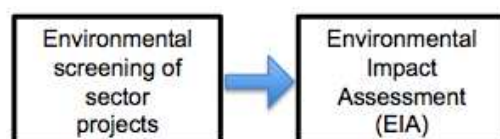


Figure 4: The key entry points for environmental mainstreaming

The **Environmental Initiative Group (IWG)** has four entry points for P-E mainstreaming during the formulation of District development plans:



The **District Development Project Approval Committee/EIG** and the **Trust Fund Committee for District Project Preparation** has two entry points for P-E mainstreaming during the formulation of District/Jamoot projects:

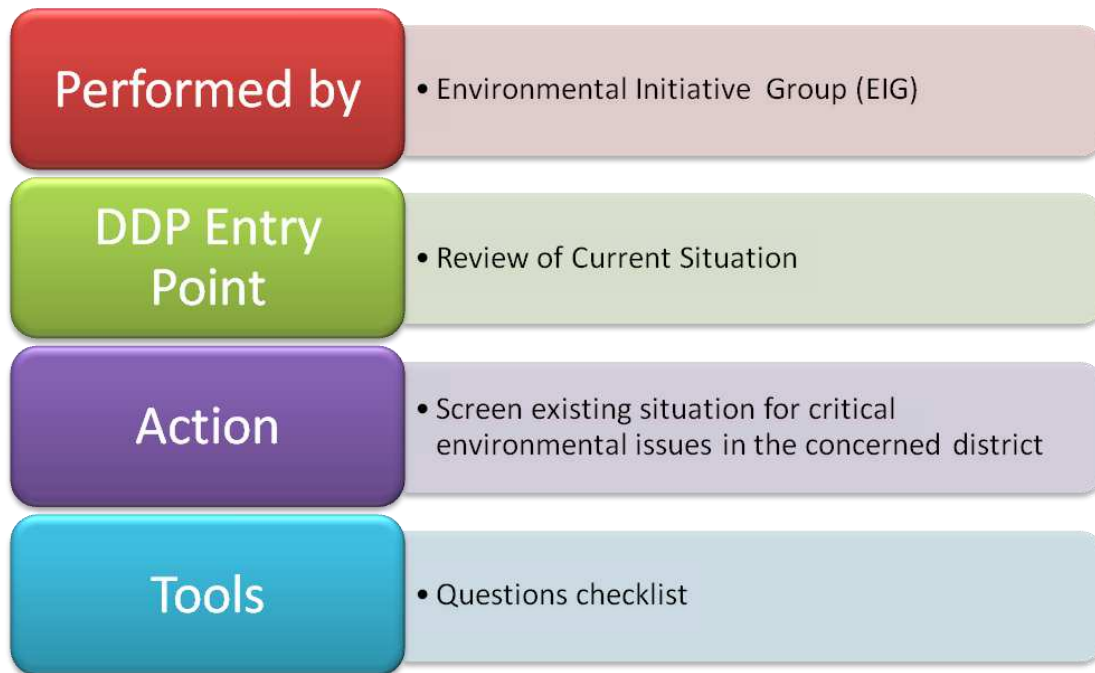


CASE STUDY – Bhutan Embraces the Contribution of the Environment to National Development

The UNDP-UNEP PEI has supported efforts to mainstream poverty-environment linkages into both national planning and sectors critical to Bhutan's economy. To achieve this, the PEI team engaged with key government officials to create awareness of these linkages and their relationship to economic development. The government prepared guidelines and conducted workshops as part of this effort. Complementing these activities, the Australian government implemented a capacity-building programme to train a team of officers from selected government agencies on mainstreaming concepts. A significant result is that Bhutan's Gross National Happiness Commission (the national body in charge of planning and development at the highest level) is now a strong proponent of mainstreaming and has embraced the task of integrating poverty-environment considerations into all sector development plans. A senior officer noted, "It has been unfortunate that environment has been seen as a sector issue in Bhutan so far. But it is no longer treated that way."

UNDP-UNEP PEI (Poverty-Environment Initiative). 2008a. "Environment, Climate Change and the MDGs: Reshaping the Development Agenda"

2. Review of Current Situation



The aim of the review of the current situation is to get a preliminary understanding of any critical poverty-environmental linkages and issues and how these relate to District development priorities (For District development priorities see the outcome of the visioning and SWOT exercise).

It should be targeted and brief. Environmental issues and linkages can be quickly ignored unless there are clear arguments for including them in the development plans.

2.1 Review of Current Situation Questions

The EIG will use the set of questions detailed below for this action. The first eight questions are designed to outline the broad environmental situation. These should be brainstormed, there is no need for statistical data at this stage.

The final three questions draw on the findings of the first set of questions focusing on the environmental assets and their potential contribution to economic development. Secondary data sources may be required for this stage.

-
1. What are the main environmental problems in the District, including the main sources of environment pollution (in the air, water, soil)?

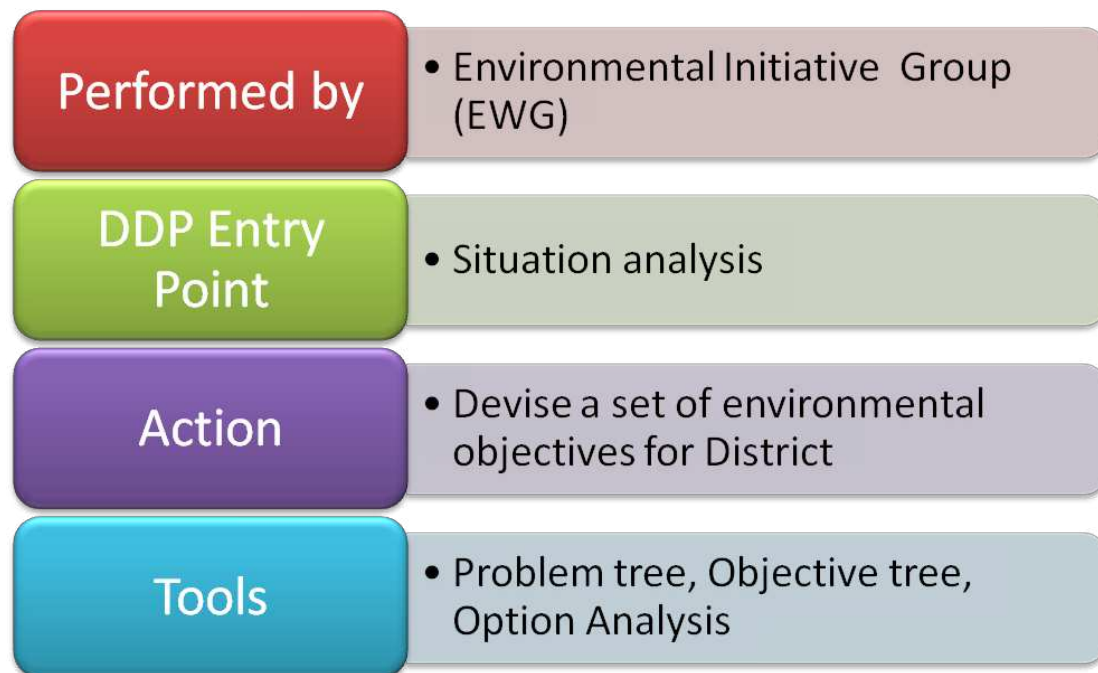
2. What are the key pressures on natural resources (including mining, land clearing, illegal logging and poaching) and associated impacts (e.g. pollution from mining, soil erosion, resource depletion, biodiversity losses)?
3. What are the environmental factors affecting migration, health, labour productivity?
4. How vulnerable is economic development and human well-being to environmental and climate change hazards, such as droughts, floods, landslides, etc.?"
5. What is the environmental quality in human settlements, health and education facilities: Waste management (including domestic waste) and sanitation; clean water, air quality (ambient and indoor); exposure to chemicals and heavy metals; occupational health hazards; water-borne diseases?
6. Are there environmental causes of malnutrition (e.g. poor soils, over-fishing)?
7. What is the degree of availability of forestlands and protected areas in the District and what is their condition in the recent years (reduction/expansion of forestlands, preserving the biodiversity etc).
8. What is the current environmental monitoring and control system in the district and its effectiveness?



-
- What are the five key environmental assets of the District?
 - How do they contribute to the key sectors (agriculture, industry, infrastructure)?
 - What is their importance to economic and social development, particularly poverty reduction?

The above question sets are for guidance purpose only. The EIG may decide to use additional questions set of questions. Based on the nature of the environmental issues (both problems and opportunities) identified in the problem tree analysis, the EIG, will now be required to collect statistical base line information. For example, if deforestation is considered as an issue, the baseline information related to percentage of forest coverage needs to be collected at this stage. In cases, where such baseline information is difficult to gather, the EIG's collective judgement should be used to analyse the seriousness of the issues raised during this analysis phase.

3. Setting Environmental Objectives



Like all other sectors and their relevant working groups, EIG, following the steps, illustrated in this guideline, is required to produce a set of objectives for the environmental sector. Setting of such objectives should be aligned with the national environmental priorities as illustrated in the NDS, PRS 3 and other environmental policy documents. They should also be consistent with the Vision and SWOT analysis outcome conducted by the District Working Group.

The setting of objectives involves a three-stage approach:

1. Identifying environmental problems using a problem tree
2. Turning problems into objectives within an objective tree
3. Selecting and prioritizing objectives and actions in an options analysis

This is a group exercise to be conducted among the representatives of the EIG.

3.1 Problem Tree

A problem tree is a useful device for identifying environmental problems and their causes and effects within Districts.

The major problems that are identified are known as 'focal problems'. For each focal problem, the principal and secondary causes and effects are brainstormed and mapped on separate problem trees. It is recommended to identify maximum five focal problems per District/Jamoat, thus to have a maximum of five problem trees in order to ensure prioritisation takes place from the very beginning of the planning exercise.

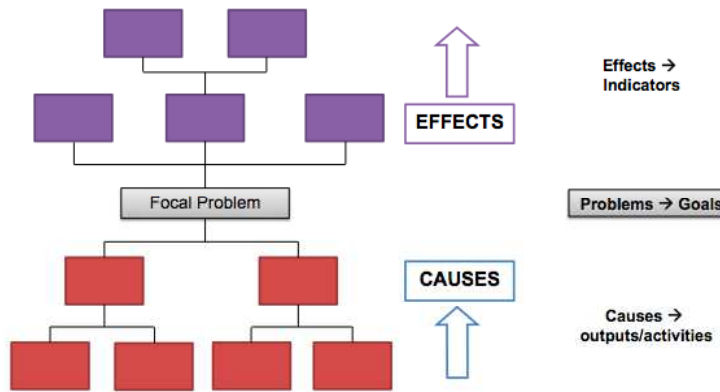


Figure 5: Outline of a problem tree

Method

There are two different methods for developing a problem tree. The one you select will depend on the group of people you are working with. The first thing you should do is decide which method best suits your group.



You will need a blank sheet of flipchart paper, pens, small post-it notes (or small card and tape).

Method 1: "Brainstorming"

Suitable for the more creative groups, but be careful not to get confused.

- Participants **brainstorm issues** around a problem(s) as yet unidentified. Each issue is recorded on a separate post-it note. Don't stop and think or question, just scatter the post-it notes on the flipchart.
- **Identify and agree the focal problem.** It is probably there on the flipchart, but may need rewording. Note that a problem is not the absence of a solution, but an existing negative state.
- **Sort the remaining issues into causes and effects** of the problem.
- **Cluster the issues into smaller sub-groups** of causes and effects building the tree in the process. Tear up, re-word and add post-its as you go.
- Finish by drawing **connecting lines** to show the **cause and effect relationships**.

Method 2: Systematic

Suitable for systematic and methodical minds.

- Participants first **debate and agree the focal problem.** Write this on a post-it note and place it in the middle of the flipchart.
- Now **develop the direct causes** (first level below the focal problem) by asking '**but why?**'. Continue with 2nd and 3rd level causes, each time asking '**but why?**'
- **Repeat for the effects** above the focal problem instead asking '**so what?**'

- Draw **connecting lines** to show the **cause and effect relationships**.

Once the method has been decided, the problem tree can be created.

Example

An EIG has identified one focal problem as urban pollution. See below for the problem tree they created.

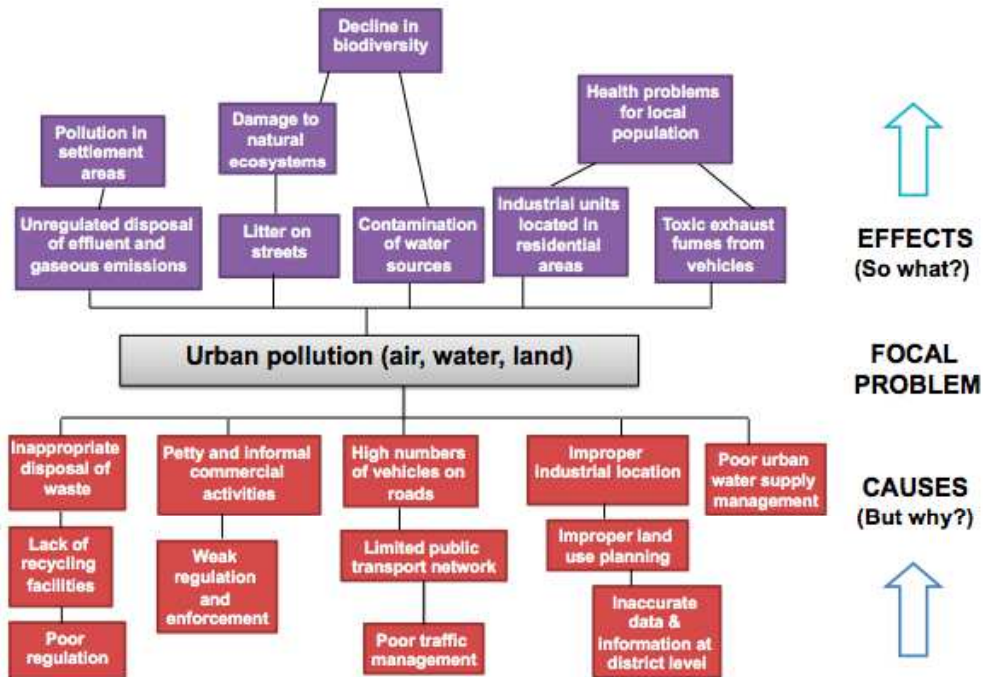


Figure 6: Problem tree – focal problem is urban pollution

In this example you can see that the focal problem is urban pollution. It has a number of causes and secondary causes, which include *high numbers of vehicles on the roads* and *limited public transport network*.

Effects of the problem include *toxic exhaust fumes from vehicles* and *health problems for local population*. Causes could be economic, commercial, social or regulatory, there is no limit!

Once a problem tree has been created, it can be used to generate objectives within an objective tree.

3.2 Objective Tree

Having defined the problem using a problem tree can then be converted into objectives.

This is done by reformulating elements of the problem tree into positive statements. Therefore a problem tree becomes an objective tree.

Focal problem → Goal/Higher level Objective

Causes → objectives/activities

Effects → Possible Indicators/themes for indicators

Example

Now the Environmental Initiative Group that has identified a focal problem as urban pollution can then turn this into a positive statement: integrated pollution management.

The causes become possible objectives such as functional public transport network and improved traffic management. Similarly, effects become indicators for measuring success related to the goal identified- such as *reduced exhaust emissions* and *improved health of local population*.

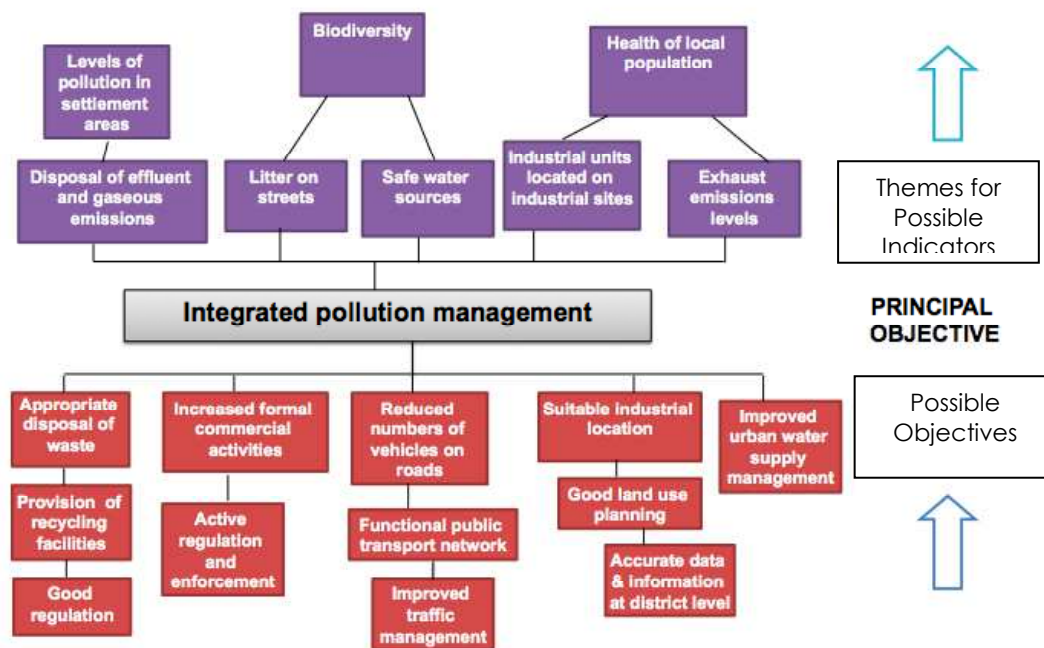


Figure 7: Objective tree – focal problem was urban pollution

3.3 Option Analysis

Once the objective tree has been created, a number of options will have been suggested. It is unlikely, however, that all the objectives will be possible to be delivered at once. It may be that there are budgetary or capacity restraints.

In order to assess each option, the criteria for judgement should be decided upon by the EIG. Some key factors are suggested below:

- Degree of fit with macro objectives (PRS, Oblast Plan etc.)
- What other stakeholders are doing to tackle some of the issues?
- What are the expected benefits? To whom?
- What is the feasibility and probability of success?
- Risks and assumptions? Who is carrying the risk?
- Financial criteria – costs, , financial sustainability?
- Social criteria – gender issues, socio-cultural constraints?
- Environmental criteria – what are the environmental costs and gains?

- Technical criteria – appropriateness, use of local resources, market factors?
- Institutional criteria – capacity, capacity building, technical assistance?
- Economic criteria – economic returns, cost effectiveness?

The criteria should also include considerations such as the alignment of the objectives to overall district vision, level of gap between the baseline information and the possible target (i.e. if the gap is higher than the gravity problem is also intense and therefore such problems should be prioritised).

Once the criteria have been set, the decisions on which objectives to focus on can be judged against the criteria.

The objective tree can be adapted and colour coded to show the decisions. Green can be used for 'go ahead' objectives and red for 'on hold' objectives.

Example:

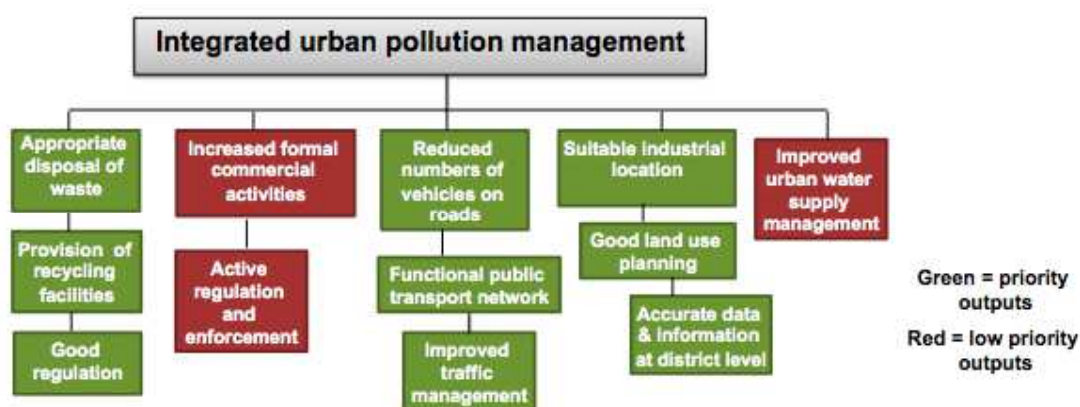
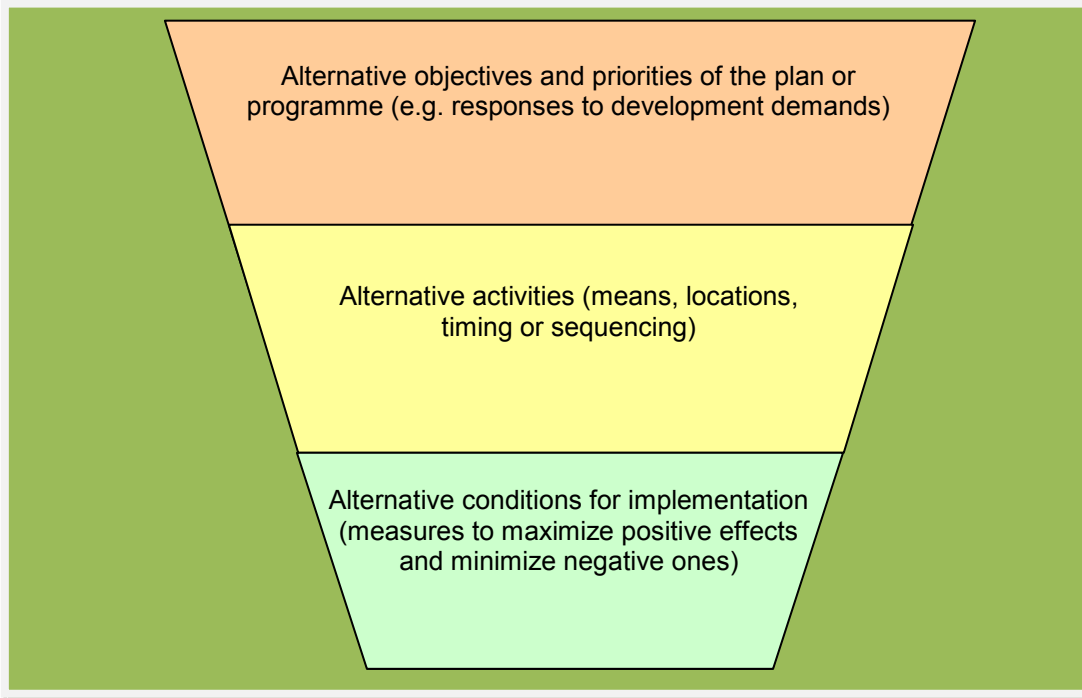


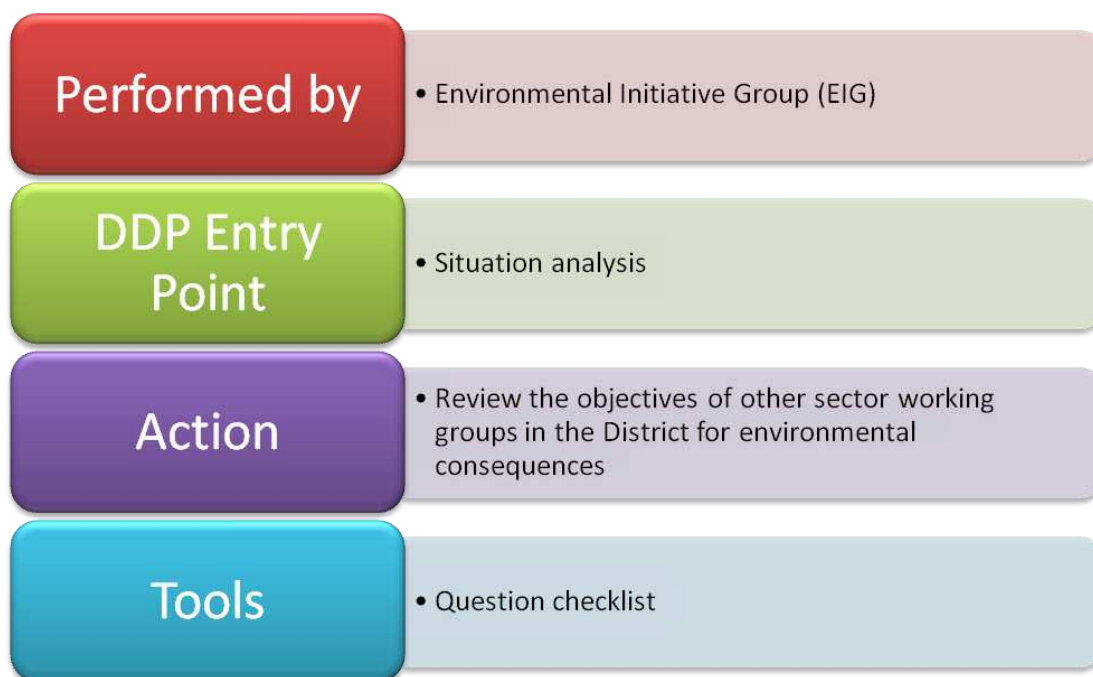
Figure 8: Example of a vision analysis

Three of the objectives have been selected to be developed into projects, for example. In this case, the Ministry of Industry has already put in place measures to address the informal sector and the Ministry of Infrastructure is due to launch a water project so it is not necessary to deal with these objectives at this stage.

While prioritising the options, the planners should consider various alternatives for the selected objectives with the aim to maximise economic growth and job creation without any detrimental effect on the environment. In order to do so, the planners should analyse alternatives at three different levels, as illustrated in the following diagram-



4. Environmental Overview



4.1 What is an Environmental Overview?

An environmental overview is a rapid environmental assessment tool for use during the formulation stages of policies and programmes. It is a simple tool that can be adapted to different programmes, plans, projects, strategies and policies and other documents.

Environmental overview can

- **flag** potential environmental **opportunities or constraints** and their implications within each sector goal/objectives;
- help **stimulate additional dialogue** with concerned sectors, experts, thematic groups, other stakeholders and the general public.
- help to **indicate the need for** a more detailed environmental **screening** during sector program and project preparation.

Different sector working groups will be required to produce their own problem trees and formulate their goals, objectives, activities, indicators accordingly,' which will then be submitted to the EIG for review as an Environmental Overview.

4.2 How to Conduct an Environmental Overview?

The process is highly structured and involves following a series of questions. It is designed to be conducted in a group situation around a table and flip chart.

The questions are designed to highlight particular environmental consequences of but also effects on sectoral plans and to lead to proposals of how to mitigate risks and maximise any opportunities identified.

The questions should be answered in sequence.

Part one questions concern the baseline conditions for the sector.

Part two contains questions concerning the impacts and opportunities and how the draft objectives can be redrafted to take these, and the baseline conditions, into account.

1	<p>What are the environmental conditions that the sector operates in?</p> <ul style="list-style-type: none"> • <i>What are the major land, water & natural ecosystems that characterize the area? (e.g. forests, valleys, mountain ecosystems, lakes, climate, biological or mineral resources)</i> • <i>Do any of these represent untapped environmental opportunities?</i>
2	<p>What are the environmental issues that affect the sector?</p> <ul style="list-style-type: none"> • <i>Is the area prone to flooding?</i> • <i>Does it suffer from soil erosion?</i> • <i>Water shortages? Waste management problems?</i> • <i>Condition of population: poverty, natural hazards, land shortages?</i>
3	<p>Do the plan projects/activities address the environmental causes of major sector specific development problems?</p> <ul style="list-style-type: none"> • <i>How do they address them? What linkages are there?</i> • <i>Is there anything not addressed?</i>
4	<p>Are the strategies environmentally sound?</p> <ul style="list-style-type: none"> • <i>Are any risks taken into consideration and suitably mitigated?</i> • <i>Highlight any strategies that may cause problems.</i>
5	<p>Are there alternatives that produce a more positive environmental impact with the same level of effectiveness?</p> <ul style="list-style-type: none"> • <i>Suggest alternatives or additions</i> • <i>Show examples of best practice from other countries that might be adapted</i>
6	<p>Do the proposed indicators adequately reflect the environmental concerns?</p> <ul style="list-style-type: none"> • <i>How will indicators be monitored and evaluated?</i> • <i>Can they be measured accurately?</i> • <i>Is baseline data available?</i> • <i>Are any indicators missing?</i>

Case Study:

The Agricultural Sector Working group has just submitted its problem tree and possible objectives for an environmental overview. Here is a section of the options analysis showing some of the outputs they are considering for their objective 'increased agricultural production'.

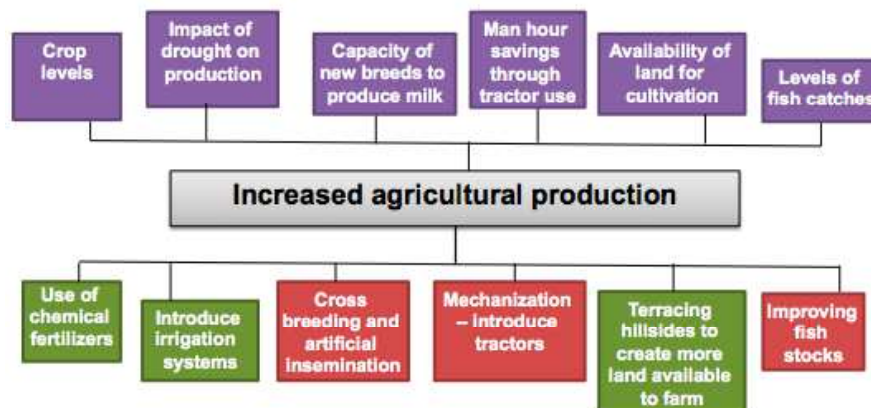


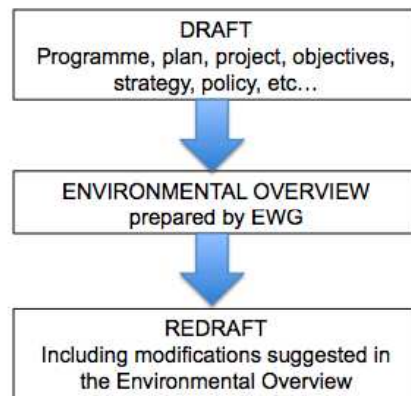
Figure 9: Summarized vision analysis for case study: increased agricultural production

These are the headings to the answers to the questions. A short paragraph would be required on each bullet point.

- 1) What are the environmental conditions that the sector operates in?
 - Hilly region, lakes and some forest (much reduced by farming in recent years)
 - Mild climate, one rainy season, one drought on average per year
- 2) What are the environmental issues that affect the sector?
 - Subsistence farming, insufficient produced to export
 - Soil erosion, over-cultivation
 - Droughts for several consecutive years
 - Diminishing fish stocks
 - Demand for land outstrips supply
 - 70% of rural population lives under poverty line
- 3) Do the plan projects/activities address the environmental causes of major sector specific development problems, as identified by the EWG?
 - Addresses the need to increase production so as to ultimately increase national food stocks
- 4) Are the strategies environmentally sound?
 - Some concern over the use of chemical fertilizers
 - Irrigation methods may create water shortages elsewhere if not properly addressed.
- 5) Are there alternatives that produce better environmental impact with the same level of effectiveness?
 - Higher use of organic fertilizers instead of chemical fertilizers
 - Crop rotation to rest the land
- 6) Do the proposed sector indicators adequately reflect the environmental concerns?
 - Baseline survey required for current levels of crops produced. Will it be measured per capita or per km squared?
 - 'Impact of drought on production' should perhaps be changed to consider rather the levels of crops produced on monthly basis comparing to past years like for like.

4.3 Results of Environmental Overview

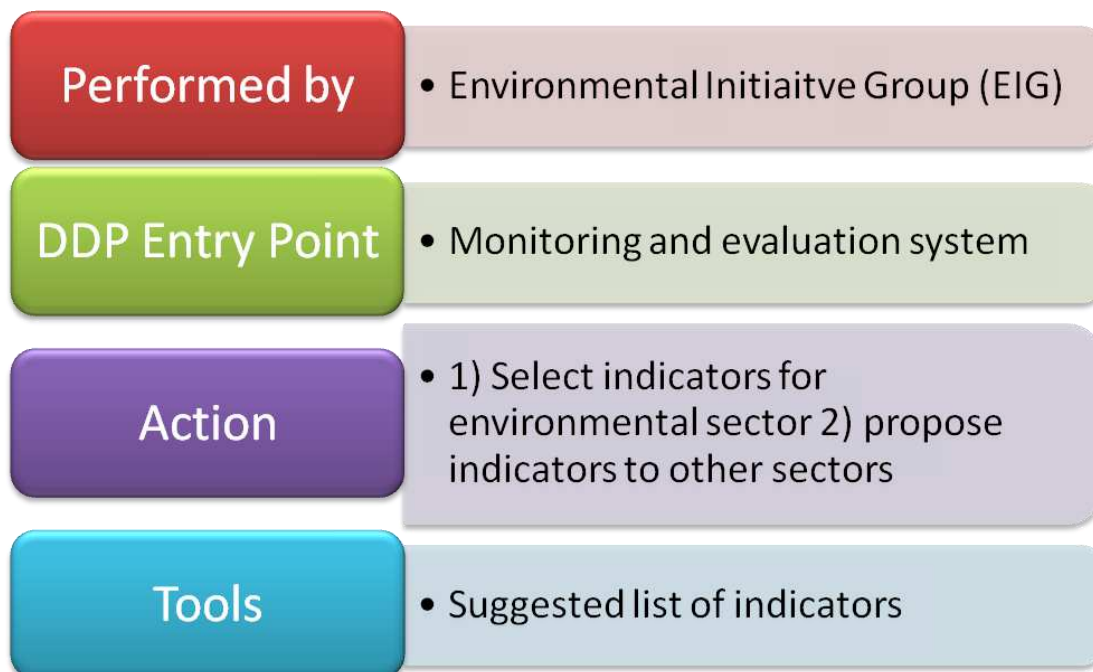
Results of the environmental overview are communicated to Agricultural Working Group who then incorporates the results of the environmental overview into the redrafts. The chain is shown in the diagram below.



On the basis of the review, it may be necessary to change or add objectives or potential indicators of the sectors. In particular, the EIG may want to help strengthen sector capacity to integrate P-E indicators into sectoral plans. This may include proposal of a set of indicators that capture the highest-priority environmental issues and challenges in some key sectors.

If addressed early enough (through ensuring representation of the environmental initiative group in other sector working group meetings), changes proposed are often minimal, but on rare occasions, a proposal could be blocked if its environmental risks were too high and necessary precautions could not be put in place.

5. Environmental Indicators



Setting indicators is an important part of the planning process of any proposal, be it an objective setting exercise or specific projects. Setting poverty-environmental indicators is key to mainstreaming the environment. Environmental indicators measure the progress of a proposal in meeting its objectives and enable the EIG to assess whether continued consideration is being given to potential environmental consequences.

“If you can’t measure it, you can’t manage it!”

Setting environmental indicators at early stages is key to ensuring that any environmental consequences can be assessed throughout the project/programme. This also specifies the data that will need to be collected enabling the planners to set the budget that should be allocated to it.

5.1 How to Set Them and Who With?

To prepare for the annual review, the sectors are requested to use poverty-environment mainstreaming indicators to reflect on environmental changes in their plan. The analysis of the performance against these indicators can become the basis for situation analysis in the next planning iteration process.

Indicator setting is best when it is a collaborative process. After all, who knows the proposal better than the people who have written it? Environmental indicators that have been devised with the sector groups are more likely to be achievable.

Once an initial draft of the proposed indicators has been completed, it is recommended to hold a meeting with the concerned sector working group. Discuss the proposed environmental indicators, add or remove indicators where necessary, and then together to make a selection of the indicators to use.

Terms and Principles:

Indicators are identified to show how we intend to measure change from the current baseline. Targets (mainly sectoral) are set to be achieved by the end of the time period by a designated party, together with milestones to measure progress along the way. EIG will help create and implement sectoral targets and milestones to meet the environmental objectives.

INDICATOR	A quantitative and/or qualitative variable that allows the verification of changes produced by an intervention relative to what was planned.
TARGET	A specific level of performance that an intervention is projected to accomplish in a given time period.
MILESTONE	A point during the planning cycle by which progress can be made and measured.
BASELINE	The situation prior to an intervention against which progress can be assessed of comparisons made.

Don't confuse an indicator and a target. Indicators are a **means** by which change will be measured; targets are definite **ends to be achieved**. See the following example:

INDICATOR → The proportion of urban population with access to public transport
 TARGET → Increase by 50% between 2010 and 2020 the proportion of the urban population with access to public transport.

5.2 The Process

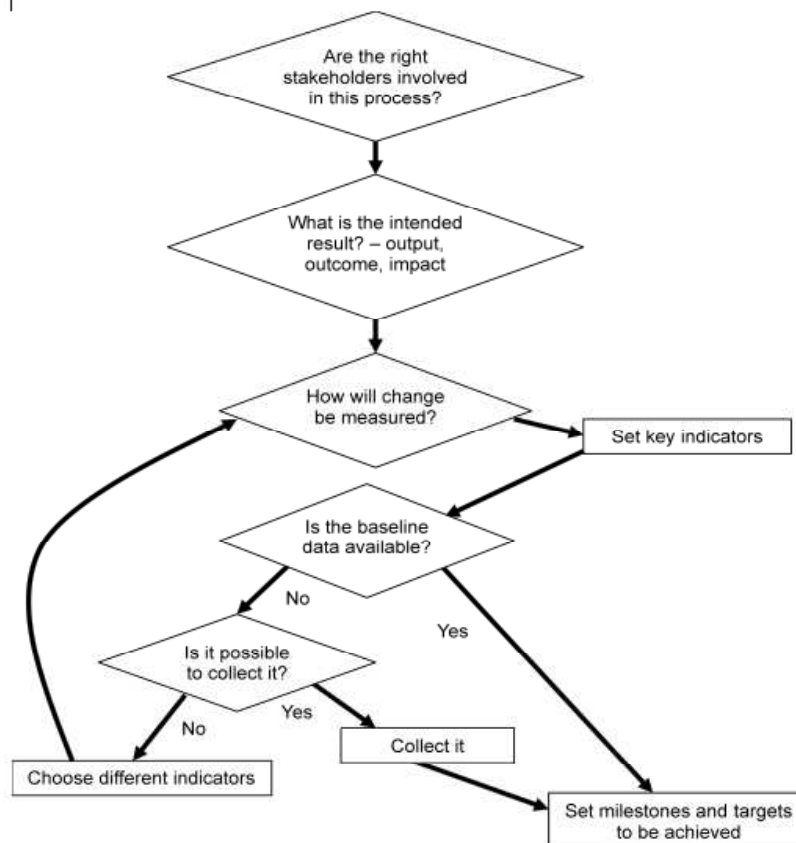


Figure 10: The indicator setting process. Source: *Fao Handbook On The Logical Framework Approach, University of Wolverhampton, CIDT (2009)*

5.3 How to Construct Indicators?

Step 1: Brainstorm ideas for possible indicators as a measure of change. At this stage, keep them simple and just write the area that could be measured. For example:

1	Exhaust emissions
2	Reduction of informal businesses
3	Safe water
4	Location of industrial sites

Step 2: Make the indicators clearer. They should measure quantity and quality and if possible should be location-specific and disaggregated for example by gender, ethnic group, ages or geographic area. (Averages can hide disparities)

1	% reduction in exhaust emissions in town centres
2	Proportion of businesses formally registered
3	% urban population with access to safe drinking water
4	Number of industrial units located on industrial sites

Step 3: Consider the baseline information available.

For each indicator ask:

- 1) Is the current situation known? If not, can baseline data be gathered now cost-effectively? Yes/no
- 2) Will the necessary data be available when required? Yes/no

If the answer is no to either question, then the indicator should be rejected and another one used in its place.

Step 4: Using the relevant baseline data, set milestones and targets.

		Baseline	Milestone	Milestone	Target
		Now	1 yr	2 yrs	3 yrs
1	% reduction in exhaust emissions in town centers (in tonnes per capita)	21.4	19.5	17.3	17
2	Proportion of businesses formally registered	5%	15%	30%	60%
3	% urban population with access to safe drinking water	30%	50%	80%	95%
4	Number of industrial units located on industrial sites	30	50	80	100

Step 5: Check that the milestones and targets are SMART.

SMART

- S**PECIFIC → Clearly formulated and well defined
- M**EASURABLE → Can be practically measured
- A**CHIEVABLE → Within capabilities and resources

R ELEVANT	→	Linked to the task in hand
T IME-SPECIFIC	→	Achievable within a specific time frame

Type of Indicators:

BINARY	Simple yes/no <i>e.g. Proposal submitted for Environmental Impact Assessment</i>
QUANITATIVE	Measures numerical values over time <i>e.g. Number of recorded illegal logging incidents</i>
QUALITATIVE	Measures changes than can't be captured by numbers. For instance, behavioural changes, perceptions, strengthened capacity etc.. <i>e.g. Awareness of women in District/Jamoat of benefits of immunizing children</i>
PROXY	Relates to directly observational change resulting from outputs/activities. Use with care and with reference to other indicators. <i>e.g. Maternal health status (due to higher enrolment of women in secondary schools) .</i>
PROCESS	Measures how something is done (tends to be qualitative measures) <i>e.g. Stakeholders consultation meeting held to develop P-EI strategy</i>
PRODUCT	Measures the end result, how technologies have been adapted <i>e.g. P-EI strategy developed</i>

5.4 Identifying Data Sources

Having set indicators, milestones and targets now consider in more detail what data sources or evidence can be used to measure them. This is a vital aspect of the initial planning and is often overlooked. Building in data sources at this stage will making the monitoring of the environmental indicators easier.

Data sources will invariably be documents, mostly written, but sometimes film or audio. Typical data sources include:

- Project records, reviews and reports
- External evaluation reports
- Other reports
- National and international statistics
- Minutes of meetings and attendance lists
- Survey reports
- Newspaper, radio and TV recordings, photographs, satellite images

In specifying data sources, it is helpful to consider the following questions:

- 1) What evidence is required?
- 2) Where will it be located?
- 3) How will it be collected?

- a. Is it available from existing sources?
- b. Does it require special data gathering?
- 4) Who is going to collect it? (project team, consultants, stakeholders?)
- 5) Who will pay for its collection?
- 6) When/how regularly should it be provided? (monthly, quarterly, annually?)
- 7) How much data gathering is worthwhile? (in terms of quantity and quality)

REMEMBER!

- ✓ Setting indicators is a collaborative process
- ✓ Set indicators early
- ✓ The fewer the better
- ✓ Set a variety of types of indicators
- ✓ Indicators should be disaggregated
- ✓ Set SMART milestones and targets

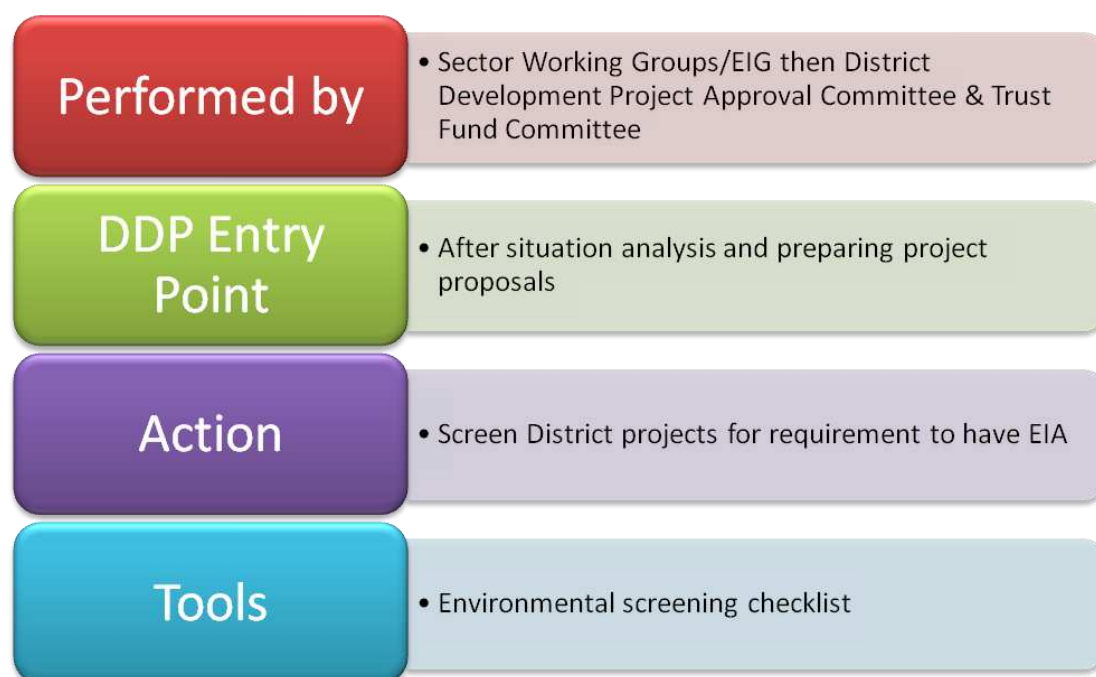
5.5 Examples of Indicators

The following poverty – environment indicators can be used as a starting point.

Sector	Indicators
Agriculture	<ul style="list-style-type: none"> • Intensity of use of land. • Share of area occupied by organic farming in total utilized agricultural area. • Intensity of use of water in agriculture. • Intensity of pesticide and fertilizer use. • % of land area at risk of soil erosion or desertification. • % of famers who have adopted improve technologies that are environmentally sustainable • Deforestation rate; proportion of land area covered by forest (MDG7, ind. 25). • Intensity of use of forest resources. • # of recorded illegal logging • EIAs conducted for agricultural projects • % increase in income in area after new environmental measures introduced. • Proportion of people below food poverty line
Basic Services (Education Health)	<ul style="list-style-type: none"> • Environment in education curricula. • Proportion of teachers trained in environmental education. • Proportion of hospitals with adequate waste management system. • Proportion of bio-medical wastes adequately managed. • Morbidity rate in environmentally related diseases (e.g. pulmonary diseases, diarrhea, malaria). • Air and water quality • EIAs conducted for health and education projects • Awareness of women of potential health hazards from cooking with wood inside houses • % saving of health costs after introducing environmental project
Infrastructure (Transportation Water & Sanitation Energy Land)	<ul style="list-style-type: none"> • Proportion of people with sustainable access to an improved water source, urban and rural • Proportion of population with access to improved sanitation, urban and rural • Proportion of total water resources used • Total water used • Waster water discharged to sewer or other water bodies

	<ul style="list-style-type: none"> • % of energy supplied from renewable sources • % of people relying on wood as their main fuel. • EIAs conducted for infrastructure projects • Increase in earnings potential for poor people • Proportion of urban population living in slums • Pollution caused by transport and polluting • Total fuel consumption • Number of cars used for commuting • Amount of work related fuel used per car • Number of people using public transport
Industry	<ul style="list-style-type: none"> • Number of companies that have an environmental management plan in place • Number of tourists visiting protected areas • EIAs conducted for commercial projects • Number of jobs created for local people • Increase in earnings potential for local people • Consumption of ozone-depleting substances • Amount of waste type produced by type per quarter (paper, cardboard, plastic, aluminum, other waster, total) • % of waste recycled • Number of fines charged to companies for non compliance with environmental requirements
Climate change	<ul style="list-style-type: none"> • Number of hot days • Number of cold days • Annual mean temperature • % precipitation falling in winter • Annual river flows • Number of natural disasters • Scale of natural disasters • Impact on local poverty levels of improved mitigation of natural disasters / climate change • Speed of recovery from natural disasters • Greenhouse gas emissions • % population trained for disaster management
Environmental, Governance and Economics	<ul style="list-style-type: none"> • Cost of environmental degradation as a % of GDP • Value of national environmental resources • Air and water quality • # of violations of environmental laws and regulations • Awareness of local people of environmental issues • Behavioral change in government officials in understanding relevance of environment • Proportion of land covered by forest • CO2 emissions, total, per capita and per \$1 GDP • Proportion of terrestrial and marine areas protected • Proportion of species threatened with extinction • Number of sectoral policies and strategies effectively integrating environmental concerns • % change in expenditures invested in the environment • Involvement of local community in environmental management

6. Environmental Screening of District/Jamoat Projects

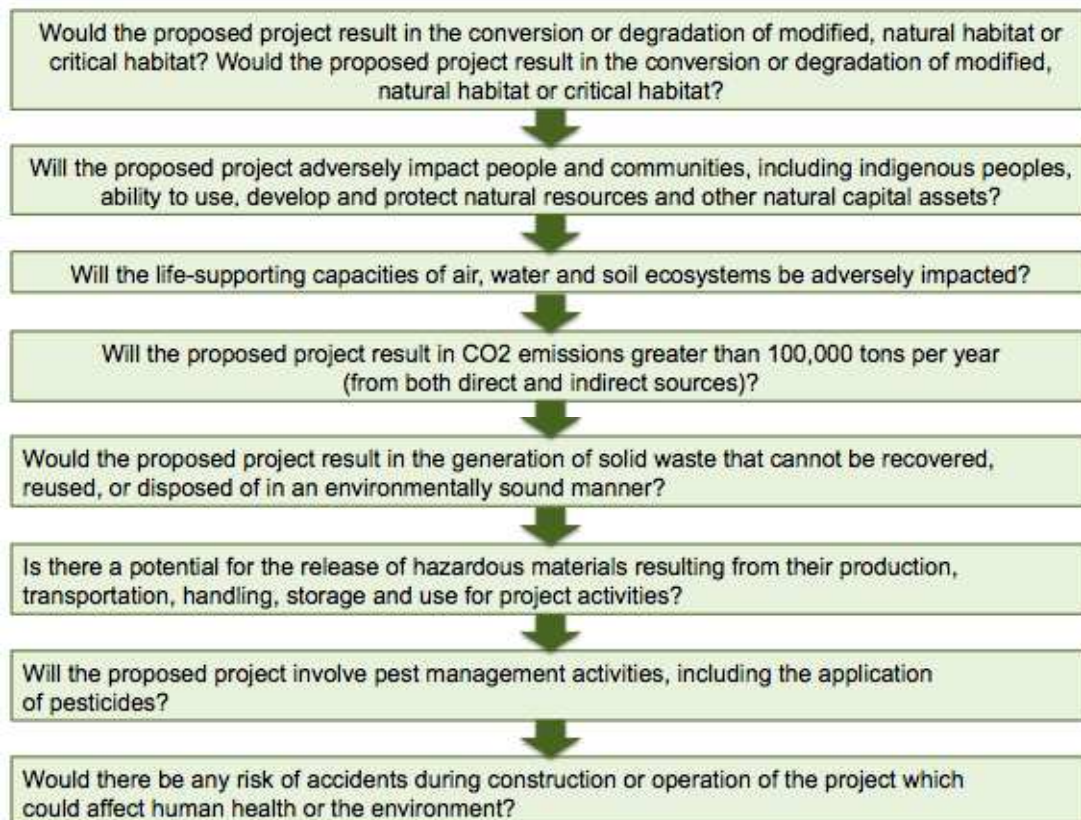


A large number of District projects and activities may have environmental consequences. The formulation stage of these projects is an important juncture to identify environmental opportunities, to consider alternative strategies and results and to mitigate negative environmental impacts.

It is therefore important to have an initial screening of all project proposals to decide whether they will require an environmental impact assessment (EIA).

6.1 The Environmental Screening Checklist

It is a simple process of answering questions about the proposal.
Follow the chart answering yes or no to each question.

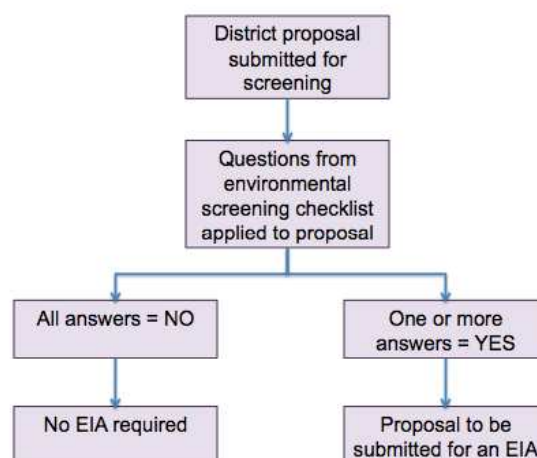


6.2 Results

If responded "yes" to any of the questions, an **EIA is required**.

If responded "no" to all of the questions, **no assessments are required**.

Where no EIA is required, a certificate stating that it has passed the screening process will be issued by the Project Approval Committee. At a minimum, national and local laws and regulations for environmental assessment will be followed throughout the project formulation / design.



Examples:

Here are two examples of District projects that have been submitted for environmental screening.

Project A: New 400km highway

A new highway, 400km, crossing the country is planned to be constructed between 2012-2016 at an estimated cost of \$30m. It will run the length of the country and will pass through both natural areas (including a protected forest area), small villages and will link 4 major cities. In some areas, the highway will replace existing roads and in others new roads will be built. The highway is designed to solve overcrowding problems on existing roads and create new opportunities for businesses and commuters.

Project B: New play area in local park

There is currently nowhere for young children to play in a safe environment in the area of town surrounding the Yaole Park. It is proposed to create a small playground area on the edge of the Yaole Park of approximately 30m by 50m. Whilst the Yaole Park is a protected area, the playground would be located on the very edge of it and be fenced off so that children can play in a controlled environment. Modern safety features will be built in to each of the 12 structures proposed (these include swings, slides, roundabouts and climbing frames). The projected budget is \$7,000 funded. Each project is put through the environmental screening checklist.

Which one(s) will need to be submitted for an EIA?

ENVIRONMENTAL SCREENING CHECKLIST FOR DISTRICT/JAMOAT PROJECTS	Project A	Project B
	Yes/No	Yes/No
Would the proposed project result in the conversion or degradation of modified, natural habitat or critical habitat?	Yes	Yes
Will the proposed project adversely impact people and communities, including indigenous peoples, ability to use, develop and protect natural resources and other natural capital assets?	Yes	No
Will the life-supporting capacities of air, water and soil ecosystems be adversely impacted?	Yes	No
Will the proposed project result in CO2 emissions greater than 100,000 tons per year (from both direct and indirect sources)?	Yes	No
Would the proposed project result in the generation of solid waste that cannot be recovered, reused, or disposed of in an environmentally sound manner?	No	No
Is there a potential for the release of hazardous materials resulting from their production, transportation, handling, storage and use for project activities?	Yes	No
Will the proposed project involve pest management activities, including the application of pesticides?	No	No
Would there be any risk of accidents during construction or operation of the project which could affect human health or the environment?	Yes	No

Yes, both projects will require an EIA. It is likely that project A's EIA will be a longer process than project B's due to its complexity.

Note that the size of the project budget has little bearing on the necessity of conducting an EIA. Even small projects may have a significant impact on the environment. It is important to remember conducting EIA for certain projects is obligatory by the law of the Government of Tajikistan. Such projects will automatically be required to do an EIA without conducting the screening process mentioned in this section.

7. Environmental Impact Assessment



Even though you may not have to complete the EIA yourself, it is important to understand what it is and why it is necessary to the environmental mainstreaming process.

7.1 What is an EIA?

Environmental Impact Assessment (EIA) is a systematic identification and evaluation of the potential impacts or effects of proposed projects, relating to the total environment (including physical, chemical, biological, cultural, and socio-economic components).

An EIA supports informed decision-making and helps shape projects to improve the quality of outcomes. Conducted by an environmental specialist, the EIA includes the analysis and reporting of environmental risks and opportunities

In Tajikistan, under the poverty-environmental mainstreaming project, all government projects, are required to undergo an Environmental Impact Assessment (EIA) under the DDP before applying for funding or receiving authorization for implementation. Similarly, public sector projects will in the future be required to submit proposals to the EIA team, however this is beyond the scope of the DDP.

The responsibility of conducting EIA lies with the investor / entity responsible for project proposal elaboration itself. The District offices will be responsible for the pre-screening of projects and of submitting proposals to the EIA team.

7.2 Objectives

The aim of the EIA is to identify risks before a project is launched and to ensure that mitigation procedures are put into place and respected throughout the project.

Short-term objectives:

- Ensure that resources are used appropriately and efficiently;
- Identify appropriate measures for mitigating the potential impacts of the proposal; and
- Facilitate informed decision-making, including setting the environmental terms and conditions for implementing the proposal.

Long term objectives:

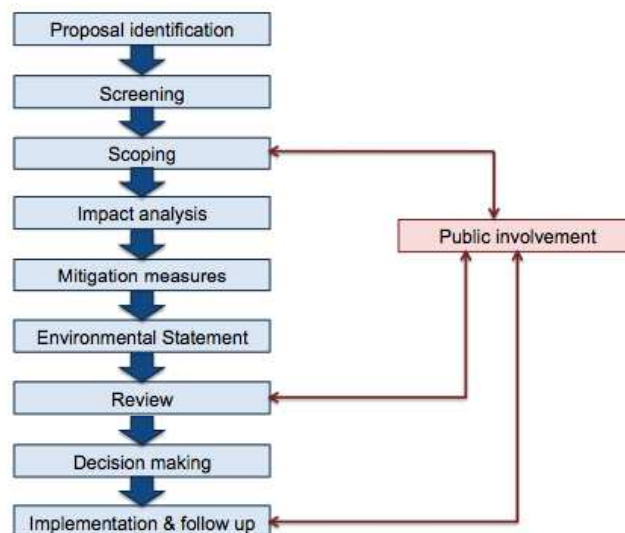
- Protect human health and safety;
- Avoid irreversible changes and serious damage to the environment;
- Safeguard valued resources, natural areas and ecosystem components; and
- Enhance the social aspects of the proposal.
- Prevention of high costs of resolving avoidable environmental damage

CASE STUDY – UTOPISTAN WETLAND

The Talipea wetland is the largest wetland in Utopistan (an imaginary country) measuring just over 8 hectares. In the 1990's the wetland's usage was not controlled, and it was used for a variety of activities in particular agriculture and hydropower (supplying electricity to the local city). The resources of the wetland were overused and by the 2000's, the overall level of wetland had dramatically reduced. In 2003, there was a crisis as the hydropower plant failed. The government were obliged to buy generators to supply energy at a much higher cost than the cost of preparing and implementing an EIA. The government realized where the problem lay and by the late 2000's, the wetland had been restored, controlled agriculture activities permitted and the hydropower plant was able to supply power again. In conclusion, had an EIA been done early on, these problems would have been avoided and the government would have

7.3 The Steps

The EIA process involves a number of steps, some of which involve public involvement (denoted by the acronym PI) in the descriptions below.



1. Proposal Identification

All projects, are required to submit their proposals regardless of the perceived environmental impact.

2. Screening

Preliminary determination of expected impact of a proposal on the environment. Some projects will not require full EIAs.

3. Scoping

Process of determining major issues and impacts for EIA.

4. Impact Analysis

Takes account of all important environmental impacts, ensuring nothing is omitted.

5. Mitigation Measures

Creation of an Environmental Management Plan (EMP) to identify mitigation measures during project construction and operation.

6. Environmental Statement

A document for decision makers to objectively evaluate the project and other stakeholders to contribute opinions

7. Review

To assure the completeness and quality of the information gathered in EIA.

8. Decision Making

Documents submitted to the Authority and reviewed by decision-making committees. If approved EIA certificate of authorization

9. Implementation and follow up

Monitoring process necessary to follow up on implementation of EIA recommendations

7.4 Results

Where an EIA has been conducted, it will recommend a range of measures necessary for the project to proceed. These will include: mitigation and monitoring measures, as well as ongoing engagement with and reporting to relevant stakeholders. Specific activities related to environmental management should be included and budgeted in the final work plan of the concerned sectors.

Appendix – Group Exercises

You will now be allocated to a team for the group exercises. You will remain with this team for the rest of this training session. As far as possible you will be allocated to teams with people from different backgrounds from yourself. By working with people you do not necessarily know, this simulates the reality of a problem tree and objective tree process where you are likely to be working with stakeholders of differing experience, knowledge and background, and also agendas from yourself.

Exercise 1: The Problem Tree

- a) In your groups discuss the two options for the problem tree and decide which method would best suit your group.

(5 minutes)

- b) In your groups, select a focal problem from the list below. Using the method that you agreed upon, create a problem tree. Following can be used as examples of problems-

- Deforestation
- Agricultural land-degradation
- Decreasing wetlands
- Flash flooding
- Unemployment among farmers
- Poor transportation infrastructure

Feed back to the group both findings and any difficulties encountered

(15 minutes)

Exercise 2: The Objective Tree

In your groups, use the problem tree you have just created to turn it into an objective tree.

Feed back to the group a summary of your objective tree

(10 minutes)

Exercise 3: Options Analysis

- a) Decide the criteria that you are going to use to choose your options. Also design a methodical way of charting each option against the criteria.

(10 minutes)

- b) Using the criteria you have just selected look at each option in turn. How does each one meet the criteria? Which options will you select and which will you reject. Why?

(10 minutes)

Feed back to the group your criteria, explain how you chose to chart your decision.

Exercise 4: Environmental Review

Swop your case study so far with another groups' documents. We do not have time to conduct a full environmental overview, but we can do a summary. So using the problem tree, objective tree and vision analysis use the checklist and brainstorm the headings for the paragraphs that you would write about if you had time to do a full review. (See the example in the training materials for the level of detail).

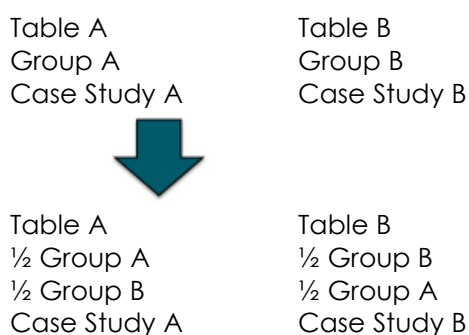
Feedback to the group on one or two questions per group. If you had any difficulties answering the questions discuss this.

(15 minutes)

Exercise 5: Environmental indicators

- a) Using the case study you used for the environmental review, propose between 5 and 7 environmental indicators.
(5 minutes)
- b) Half your group should change seats with half the group that you originally swapped the case study with. Each group will look at one set of indicators for the objectives. Those who suggested the indicators explain them to the other half of the group. Together, suggest targets and milestones that could be used for each indicator.

Note:



(10 minutes)