ASSESSING THE FINANCIAL RESOURCES NEEDED TO IMPLEMENT THE STRATEGIC PLAN FOR BIODIVERSITY 2011-2020 AND ACHIEVE THE AICHI BIODIVERSITY TARGETS

Draft Methodology Paper

Fourth draft, 14 June 2012

1 Context and purpose of this paper

The focus of this paper is the identification of the resources needed to implement the CBD Strategic Plan. It is the technical framework which covers the collection of data required to indentify (on a consistent and comparable basis) the investments and on-going expenditures required to meet the Aichi targets.

It includes how resource savings will be identified but does not cover in detail issues of the funding mechanisms and benefits of biodiversity expenditure which are required to discuss the resource needs in context.

2 Introduction

UNEP-WCMC and ICF GHK have been contracted by the UK Department for Environment, Food and Rural Affairs to work with the high-level panel to provide an aggregated estimate of the investment and on-going expenditure needed to meeting the Aichi Biodiversity Targets. Broadly, this project will deliver:

- A common framework, methodology and approach for an integrated assessment
- Analysis of the type and scale of actions necessary for achieving each target
- An initial aggregated assessment of resource requirements, and proposals on next steps.

This project will input to the work of the Convention on Biological Diversity (CBD) High-level Panel on Global Assessment of Resources for implementing the Strategic Plan for Biodiversity 2011-2020, that has been invited to report to the 11th meeting of the CBD Conference of Parties (COP 11), 8-19 October 2012 in Hyderabad. The project will produce a first draft report at the beginning of September. This report, along with other interim documents will be made available for review and comment on the CBD website. A final report will be communicated as an Information Document to CBD COP 11.

The assessment of resource requirements will aggregate work by a number of different 'cluster groups. The clusters were defined by the CBD Secretariat and separate projects are working to 'cost' these targets or groups of targets. Some of these projects are separate contracts awarded by the UK Department of Environment, Food and Rural Affairs; whilst others are existing efforts, including those commissioned by the CBD Secretariat. These clusters are listed in the table below:

	Target(s)

Awareness and behaviour change	1
Macroeconomics	2, 3, 4
Marine	6, 7, 10, 11
Water, pollution and ecosystem services	5, 8, 14
Agriculture	7
Invasive alien species	9
Genetic diversity	13
Forest-related targets	5, 7, 11, 15
Protected areas and endangered species	11, 12
Enabling activities	16, 17, 18, 19, 20

In this document, we present an initial outline of a methodological framework to guide the assessment of the investment and on-going expenditure required to meet the Aichi Biodiversity Targets. The framework aims to guide analyses of different clusters of targets, which will be undertaken by separate teams. While differences in the targets will mean that a range of different methods will need to be employed, the framework aims to provide some common guidelines that will promote a consistent approach and facilitate the synthesis and aggregation of different estimates.

This framework focuses on the investment and on-going expenditure required for delivery of the Aichi Targets in accordance with the specifications of the Defra funded research. In focusing on the resource requirements, we are mindful that halting biodiversity loss with be vital in securing the delivery of essential ecosystem services and that the delivery of Targets is expected to provide substantial net benefits for global society and the economy. While a detailed assessment of the benefits of meeting each Target is beyond the scope of the exercise contracted to UNEP-WCMC / ICF GHK, it is recognised that the report will need to ensure any estimates of resource requirements are balanced against recognition of the overall benefits, as documented in the TEEB and other assessments, and that estimates of resource needs are presented as a vital investment in our future. In order to contribute to this, the cluster groups are asked to provide a brief overview of available evidence of the benefits that meeting each target will deliver.

Furthermore, presentation of the results will also need to recognise the range of opportunities that are available to provide the resources required, through existing funding mechanisms, reform of environmentally harmful subsidies and development of innovative financing mechanisms.

3 General Approach

We recognise that attempting a global assessment of the investment and on-going expenditure required to meet for the Aichi Targets is a challenging undertaking, for a number of reasons:

- The Targets themselves are not specified in a form that facilitates such analysis – they are bold and ambitious, yet often defined in an imprecise way that presents challenges for costing;
- We can expect variations in approaches to meeting the Targets in different countries and regions, which present challenges for assessing resource needs;
- There are gaps in data and evidence both on the requirements of the Targets and the resources needed for the activities required; and
- Limited time and resources are available for the exercise.

- Proper and successful implementation requires a coherent policy approach with a clear understanding of trade-offs and political costs.

Because of these different factors, we do not expect this assessment to provide a comprehensive or fully robust assessment of the investment and on-going expenditure required to meet the Targets. Instead, the aim will be to adopt a pragmatic approach designed to provide a plausible first assessment of the likely magnitude involved, which will provide a basis for discussion and can be refined through later analysis.

The project cannot prejudge how countries will aim to meet the Aichi targets, and therefore it will not be able to develop a detailed global operational plan for meeting the Targets. However, it will aim to define plausible scenarios consistent with Target implementation, in consultation with experts, which provide a broad indication of the scale of activity required globally while recognising the varying needs and cost structures of different countries. Given the uncertainties and information and resource constraints, the exercise will inevitably be imprecise. The aim will be to define a credible and transparent approach, recognising the uncertainties involved, to allow ranges of resource requirements to be estimated and present them for discussion and refinement over time.

Our suggested approach for each Target cluster involves:

- **A review of the Targets and their context, needs and expectations**, through literature review and consultation with global experts/stakeholders. This will take into account policy challenges of implementation;
- **Analysis of the type and scale of the actions required** to meet the Targets, through a literature and web review and consultations with selected experts, stakeholders and national authorities. **These actions will involve both one-off capital investments and ongoing activities with recurrent costs**.
- **Identification of data on the per unit requirements of relevant actions**, through literature review and interviews;
- **Definition of a broad global programme of activity consistent with meeting the Targets**, in appropriate units, based on available evidence;
- **Specifying appropriate factors and ratios for up-scaling of** investment and on-going expenditures, taking account of any relevant variations between countries and regions (e.g. according to economic and environmental factors and needs); and
- **Assessment of the investment and on-going expenditure required to meet the Targets,** specifying ranges where necessary, and assessing additional resource savings as far as possible, and distinguishing between one-off investments and recurrent expenditures**.**

It is likely that not all of the resource requirements will be fully quantifiable, and that a **combination of quantitative and qualitative analysis** will be required in some cases. Given the uncertainties involved, it will be important to identify clearly the **assumptions and methods employed** and identify where these could be refined with further evidence and analysis.

Where there are gaps in knowledge and assumptions made this will be clearly laid out.

4 Methodological Issues

As far as possible, it will be necessary to employ common approaches in relation to particular methodological issues. These issues are identified here for further discussion with the cluster leads.

4.1 Top-down vs bottom-up assessments

The resources required to meet the Targets could potentially be assessed on a country-by-country basis ("bottom-up approach") or by assessing the costs of global programmes of activity ("top-down approach").

The Targets are to be implemented through National Biodiversity Strategies and Action Plans (NBSAPs), potentially involving diverse approaches and activities. However, assessing the resources required to meet the Targets in all countries using such a detailed bottom-up approach is impractical given the time and resources available.

Our proposed approach involves defining and costing scenarios that broadly capture the programme of activities required at world level to meet the targets. In adopting such an approach it is important to recognise that the activities actually undertaken in pursuit of the targets are likely to differ by country, as are the costs of these activities. Therefore while there is a need to summarise the activities required in a form amenable to costing, we need to avoid over-simplistic approaches that give a misleading picture of the activities and investment involved.

In practice, therefore, we are looking for something in between a "top-down" and "bottom-up" approach that is workable yet recognises as far as possible differences in the types of activities and levels of costs in different parts of the world. In other words, it is unlikely that we will wish to extrapolate from single global averages, and we will require more detailed assessment of the resource requirements of relevant activities in different places as a basis for up-scaling, but without being able to undertake a comprehensive resource assessment in all countries.

Some Targets (e.g. awareness raising (Target 1) and macro-economic (Targets 2-4)) may best be examined at a national level, estimating the average resource needs per country and aggregating on this basis. However, it will be important to examine variations in costs by country as far as possible and to examine the resource requirements in different subsets of countries as a basis for aggregation. For Target 12 (endangered species) the approach involves detailed assessment of costs for a substantial sample of bird species. Other Targets (e.g. sustainable agriculture – Target 7, and genetic diversity – Target 13) are likely to involve broader global or regional assessments.

Because the approach for most Targets will be relatively broad rather than highly detailed, some care will be needed in interpreting the results. It will be helpful to compare and contrast the estimates with country-by-country analyses such as those proposed by UNDP and CBD.

4.2 Types of Resource Needs

Whether reported as investments or on-going expenditure the economic costs of meeting the targets include:

- **Costs of biodiversity action** – the resources required to undertake the activities required to meet the targets. These include the expenditure on labour, materials, equipment and energy used in delivering biodiversity conservation activities.
- **Administrative and transaction costs** – the resource required to manage and support programmes of biodiversity action. These may fall on both the public and private sectors – e.g. costs incurred by the authorities in administering incentives to farmers and those incurred by farmers in entering schemes and complying with their administrative requirements.
- **Opportunity costs** – the opportunities or revenues foregone as a result of actions to conserve biodiversity. These may include, for example, reductions in crop yields through sustainable agriculture, foregone timber revenues through forest protection, or foregone development opportunities from formation of protected areas.

Comprehensive assessments of economic costs should take account of all of these elements. In practice, however, the full opportunity costs of biodiversity action are often

difficult to assess. As this study focuses on the resources required to meet the Targets, **we propose to quantify opportunity costs only to the extent that they are reflected in actual expenditures and resource needs.** This will be the case where compensation is paid for income foregone for actions to conserve biodiversity, for example through incentive payments for sustainable agriculture, land purchases or management agreements for the creation of protected areas, or compensation payments for foregone fishing rights.

There may be other examples where biodiversity conservation actions may give rise to opportunity costs where there is no financial expenditure or resource requirement – for example where protected areas limit local development activity without the payment of compensation to landowners. In these cases we will identify the opportunity costs involved and provide a qualitative assessment.

The requirements may fall on the:

- **The Private sector** – investments or on-going expenditures met by private firms and individuals; and
- **The Public sector** – investments or on-going expenditures met by public authorities in meeting biodiversity targets.

In many cases resources may be provided by both the private and public sectors through public private partnerships.

The analysis needs to avoid **double counting** of public and private costs, for example where payments are made by the public authorities to compensate for costs incurred by the private sector in undertaking biodiversity action.

The assessment will clearly need to identify, and distinguish between the one-off investments in biodiversity, and the ongoing expenditure for biodiversity conservation. For example, the establishment of Marine Protected Areas may require one-off investments in surveys, consultations, legal and policy work, management planning, purchases of capital equipment and habitat restoration activities, which need to be distinguished from ongoing expenditure requirement such as those of annual administration, habitat management and monitoring.

4.3 Total and Additional Resources

Meeting the Aichi Targets will require considerable increases in expenditures on biodiversity action compared to current levels. As far as possible, the analysis should identify both:

- The **total levels of investment or on-going expenditures** required to meet the Targets; and
- The **additional levels of investment or on-going expenditures** required to meet the Targets, compared to current levels.

Given the wide range of different actors involved at international, national and sub-national level, it is unlikely that a detailed analysis of current levels of expenditure and hence a detailed assessment of additional requirements will be possible for most Targets. Nevertheless, such an assessment will be possible in certain cases – for example, BirdLife International is assessing recent as well as required levels of expenditure for the conservation of different bird species.

For most Targets, a detailed assessment of current expenditures will not be possible and it will be more feasible to examine the overall requirements of meeting the Targets, and to provide an assessment, quantified as far as possible, of the additional action required compared to current levels (i.e. an estimate of the extent of current progress in meeting the targets). For example, the relationship between total and additional requirements of protected areas can be assessed by examining the relative scale of the current protected area network compared to that required by the Targets, as well as the relationship between current levels of spending on existing sites and the levels required to meet favourable conservation status. In some cases it may be difficult to quantify such relationships with any

level of precision, and it may be necessary to form a judgement as to the approximate scale of activity currently being undertaken.

In some cases, however, it may be easier to assess the resource required for additional action rather than the total resource requirements of meeting the target. Either way, it will be important to be clear in our definitions and to seek to estimate both the total and additional costs of meeting the Targets as far as possible.

4.4 Net levels of investment and expenditure and revenues

The assessment needs to assess the net level of resource requirement of biodiversity actions, taking account of any changes in revenues, as well as any potential cost savings alongside the analysis of investment and expenditure requirements. For example, meeting targets for agriculture, forests and fisheries will need to take account of any changes in income from crops, timber and fish. Where efficiencies are revealed or production costs lowered they also need to be taken into account, to assess net changes.

Some of the Targets will involve reform or removal of subsidies (either in general or in specific sectors such as agriculture and fisheries) which may yield significant savings for public budgets, which will need to be accounted for in the assessment.

4.5 Unit level of assessment

The investment and expenditure requirements can be estimated by selecting appropriate units and identifying appropriate unit level data.

Because the Targets vary widely in the types of actions they involve, it is likely that a variety of different units may be used. For example, these might include, among others, estimates of resource needs per:

- Hectare of habitat protected or maintained (e.g. forests, wetlands);
- Site designated (e.g. marine protected areas);
- Million population targeted (e.g. awareness raising measures);
- National study undertaken (e.g. to inform development of national accounting systems);
- Plan or strategy developed (e.g. for sustainable production and consumption);
- Species (e.g. for conservation of endangered species);
- Project (e.g. projects for in situ and ex situ conservation of genetic resources).

These unit requirements may include both investment and revenue elements and it will be important to distinguish between these and present separate estimates for both

It is also helpful here to differentiate between **fixed and variable** requirements. For example, formulating and implementing a new forest protection law involves actions that do not vary with the conservation area, but the enforcement, monitoring and management activities depend on the size of the target area. Understanding this distinction is important in scaling up, as it will determine the extent to which there are savings from increasing the scale of activity.

The approach needs to be flexible and to work in the units that are most appropriate for each Target, given the available data and the most appropriate means of defining the actions involved.

4.6 Phasing

Meeting the Targets is likely to involve a combination of one off investments and on-going annual expenditure. For example, establishment of protected areas may include in some cases one-off land purchase, compensation payments and infrastructure investments, and on-going expenditure on annual management and maintenance.

The analysis will need to make a clear distinction between these two types of categories of resource requirement, and combine them in an appropriate way. One approach would be to calculate the net present value by discounting future expenditure flows. However, in order to aid transparency with regard to annual resource requirements, phasing the investment and expenditure requirements (and presenting them in a wider context) over a specified time period may be preferable. For example, the analysis could estimate the annual resource requirements over the 8 year period 2013 to 2020 inclusive, by combining the of annual recurrent expenditures with levels of investment phased over the 8 year period (i.e. allocating 1/8 of costs to each year).

Providing a clear breakdown between one-off investment and ongoing expenditures will help distinguish between the resources required to make one-off investments and those to support ongoing activities.

4.7 Adjustment

Unit levels of financial resource requirements to carry out biodiversity actions may vary between different countries for various reasons. For example, differences in wage rates can be expected to result in differences in the expenditure related to on-going actions between low and high income countries. For this reason, adjusting the level of on-going expenditure required to support labour intensive actions (e.g. habitat restoration activities) to take account of variations in per capita GDP between different countries or regions may be appropriate. The indicators used for such adjustments may vary between Targets – for example variations in agricultural yields may be a factor affecting the impact of meeting targets for sustainable agriculture.

Therefore for each Target cluster it will be appropriate to consider whether applying a standard unit resource requirement is appropriate, or whether this should be adjusted to take account of variations in relevant cost factors between countries.

4.8 Currency

It is proposed that all investment and expenditure needs are expressed in US$ at 2012 prices.

4.9 Ranges and scenarios

In most cases it is likely that there will be more than one possible approach to meeting the Target, and that there could be different ranges of requirement depending on the interpretation of the Target and the level of ambition in the approach proposed. Therefore it will be appropriate to define and cost different scenarios – for example involving low/medium/highly resourced approaches and/or different types of action.

4.10 Overlaps and inter-relationships between Targets

Some of the targets are inter-related and may benefit from joint programmes of activity that contribute to more than one Target. In these cases it will be important to recognise these overlaps and to avoid double counting. Where there are overlaps between different Target clusters, the synthesis team will provide guidance about these and how they should be addressed. It will be important for dialogue between the cluster leads to ensure consistent and non-overlapping approaches.

Examples of likely overlaps and inter-relationships include:

- Targets 1-4 and 16-20 relate to awareness raising, macro-economic changes and enabling activities that will help to contribute to most of the other targets;
- There are links between Target 7 – sustainable agriculture, Target 8 – pollution and Target 10 – coral reefs;

- Target 11 – protected areas links with a variety of other targets (e.g. Target 5 – habitat loss, Target 6 – fisheries, Target 10 – coral reefs; Target 12 – protected areas; Target 15 – ecosystem restoration);
- Target 12 – threatened species also links with several other targets (e.g. Target 5 – habitat loss, Target 9 – IAS, Target 10 – coral reefs; Target 11 – protected areas; Target 13 – genetic diversity).

In each case, by defining the programmes of action assumed to contribute to the delivery of the targets, and by comparing these across clusters, it should be possible to avoid double counting and ensure a consistent approach across the Targets.

A further concern is that there may be conflicts between some of the Targets. For example, achieving sustainable agriculture may have negative effects on yields, suggesting a need to increase the farmed area and potentially conflicting with other Targets that seek to protect or increase the area of other habitats. The analysis will need to be aware of these potential conflicts and seek to define an approach that is consistent across Targets.

4.11 Gaps and Assumptions

As made clear in Section 3, it is unlikely that it will be possible to complete a fully comprehensive or fully robust assessment of the investments and on-going expenditure requirements of meeting the Targets with the time and resources available. It will therefore be important to present a clear and transparent approach, identifying for each Target any gaps in the analysis and their likely scale and significance, as well as the methodologies and assumptions employed, to inform future review and refinement.

4.12 Benefits of Meeting the Targets

The focus of the work of the cluster groups is on the resources required to meet the Aichi Targets, and a detailed assessment of the benefits is beyond the scope of the work. However, in presenting estimates of resource needs, it will be important to recognise that meeting the Targets will deliver substantial benefits to society and the economy.

In presenting estimates of resource requirements, **each of the cluster groups is therefore asked to provide a brief review of available evidence of the benefits of meeting each Target**. This should consider the types of benefits, giving examples and short case studies where possible, with as wide geographic coverage as possible and including monetary estimates of the benefits of relevant actions where they are available.

5 Data Sources

Data sources will vary between the Target clusters, and it is likely that specific references will need to be consulted for each. There are also some common sources which should be consulted by each of the cluster leads. These include:

- Conservation International - Draft Guidance for estimating cost of achieving the Convention on Biological Diversity Targets for 2020 (Aichi Biodiversity Targets) – gives a suggested outline approach to each of the targets
- GEF 6 Needs Assessment - Full Assessment of the Amount of Funds Needed for the Implementation of the Convention for the Sixth Replenishment Period of the Trust Fund of the Global Environment Facility – March 2012 – identifies need for GEF funding under each of the targets, but more in terms of GEF contribution to activities rather than full costs of actually meeting targets
- Information on activities potentially required to address each target, based on UNEP-WCMC analysis and expert knowledge on NBSAPs, work programmes etc., activities implied by the proposed milestones for each target, examples of activities from already completed NBSAPs, activities listed in GEF 6 Needs Assessment, etc

- CBD web pages on financial resources, including country submissions on funding needs - www.cbd.int/financial The latter provide estimates by each country for needs under each Target, though no details are given.
- The Economics of Ecosystems and Biodiversity (TEEB) - www.teebweb.org

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