



Guidance Manual on Value Transfer Methods for Ecosystem Services



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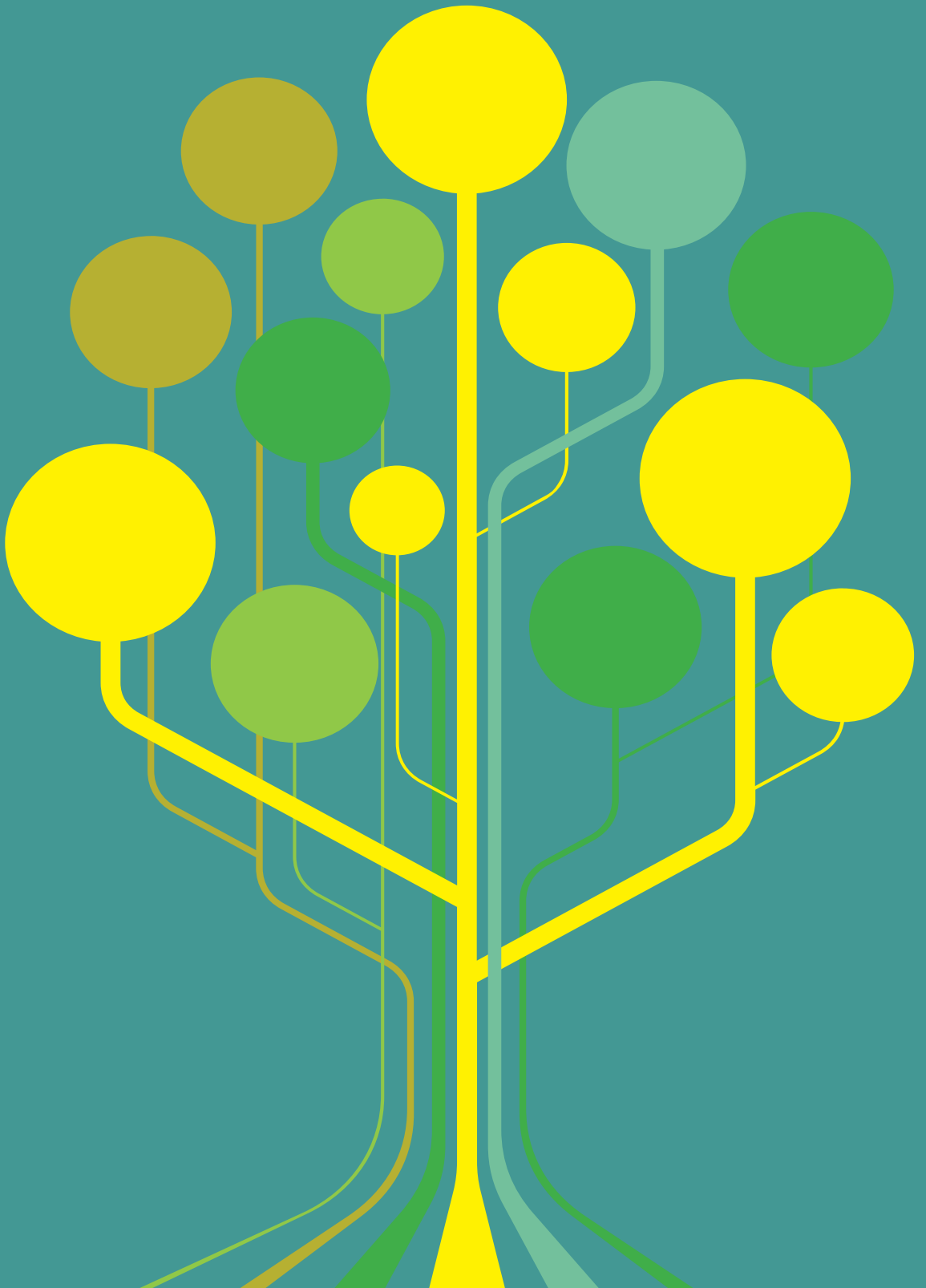
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Foreword



In recent years, there have been growing global interest and efforts in integrating the value of ecosystem services into national development frameworks. The outcome of the United Nations Conference on Sustainable Development (UNCSD) in Rio de Janeiro in 2012 (Rio+20) 'The Future We Want' highlights the importance of Green Economy in the context of sustainable development and poverty eradication, and the need for broader measures of progress to complement conventional indices such

as gross domestic product (GDP). Furthermore, Aichi Biodiversity Target 2 agreed under the Convention on Biological Diversity (CBD) as part of the Strategic Plan for Biodiversity 2011-2020 states that biodiversity values should be integrated into national and local development programs, poverty reduction strategies and planning processes, and be incorporated into national accounting and reporting systems. To achieve these targets and objectives, the role of economic valuation of ecosystem services is critical.

Within this global context, UNEP has been implementing 'The Economics of Ecosystems and Biodiversity' (TEEB) program, which has contributed to generating international attention to the economic contribution of ecosystems and biodiversity. Furthermore, the recently launched UNEP initiative -Valuation and Accounting of Natural Capital for Green Economy (VANTAGE) brings accounting and valuation into the larger goals of sustainable and inclusive Green Economy.

However, although the importance of ecosystem services valuation has been increasingly recognized by the international community, undertaking valuation requires considerable resources in terms of money, time and skills, especially if the estimates are to be obtained from primary valuation studies. At the same time, the demand for using existing information on the value of ecosystem services for environmental decision-making is strong and growing.

It is in response to this need that UNEP is pleased to present a practical guide on value transfer methods for ecosystem services valuation, which estimate the value of ecosystem goods and services based on already existing primary valuation studies. Such methods deliver on this objective by transferring values from 'study sites' to 'policy sites'. The manual lays down the steps involved in empirical application of the methods and provides a lucid guidance on precautions the analyst should observe in the process. The manual will greatly contribute to capacity development for effective use of ecosystem assessment in developing countries on how value transfer can be used to support environmental decision-making.

A handwritten signature in black ink, reading 'Achim Steiner'. The signature is fluid and cursive, with a large initial 'A'.

Achim Steiner

UN Under-Secretary General and Executive Director,
UN Environment Programme (UNEP)

Executive Summary

- The purpose of this guidance manual is to show how the **value of ecosystem services** can be estimated and incorporated into decision making. Specifically, it is designed to help a broad audience of conservation managers, government officials, private sector managers, NGOs, and statisticians to understand the available information on the values of ecosystem services and how this information can be transferred to inform the decisions that they make.
- Ecosystem services are often not traded in markets and so there are no market prices that reflect their value. As a result we tend not to take the value of ecosystem services into consideration when we make decisions that affect the natural world. **Economic valuation** is simply a means to reveal how valuable the natural world is to us.
- Economists have developed a variety of **'primary' valuation methods** for estimating the value of ecosystem services that are not traded in markets. These methods attempt to address the range of challenges involved in valuing non-marketed services that generally have the characteristics of public goods and complex linkages with the natural environment.
- Decision making often requires information quickly and at low cost. New 'primary' valuation research, however, is generally time consuming and expensive and may not always be a suitable approach. For this reason, while recognising the importance of 'primary' valuation methods, there is interest in using information from existing primary valuation studies to inform current decisions regarding impacts on ecosystems. This transfer of **value information** from one context to another is called value transfer (or benefit transfer).
- **Value transfer** is the procedure of estimating the value of an ecosystem service of current policy interest (at a "policy site") by assigning an existing valuation estimate for a similar ecosystem elsewhere (at a "study site").
- **Value transfer methods** can be divided into three main types:
 - **Unit value transfer** uses values for ecosystem services at a study site, expressed as a value per unit (usually per unit of area or per beneficiary), combined with information on the quantity of units at the policy site to estimate policy site values. Unit values can be adjusted to reflect differences between the study and policy sites (e.g. income and price levels).
 - **Value function transfer** uses a value function estimated for an individual study site in conjunction with information on policy site characteristics to calculate the unit value of an ecosystem service at the policy site. A value function is an equation that relates the value of an ecosystem service to the characteristics of the ecosystem and the beneficiaries of the ecosystem service.
 - **Meta-analytic function transfer** uses a value function estimated from the results of multiple primary studies representing multiple study sites in conjunction with information on policy site characteristics to calculate the unit value of an ecosystem service at the policy site. Since the value function is estimated from the results of multiple studies it is able to represent and control for greater variation in the characteristics of ecosystems, beneficiaries and other contextual characteristics.
- The key challenge of conducting accurate and credible value transfers is to **account for important differences** in the characteristics of the study and policy sites. Differences

in the characteristics of ecosystems, services, their beneficiaries and bio-physical surroundings can potentially result in very large differences in the provision and value of ecosystem services. It is therefore necessary to make adjustments to transferred values to reflect the important determinants of those values.

- For a number of reasons the valuation of ecosystem services using value transfer cannot be conducted with complete certainty. It is therefore necessary to measure and communicate the level of **uncertainty** regarding a transferred value. The acceptable level of accuracy is dependent on the decision making context.
- The purpose of conducting economic valuation of ecosystem services is to inform and improve decision making regarding the management of the environment. So any value transfer application should be designed to provide information that is directly useful and understandable to the decision makers involved. This requires **stakeholder engagement** in the value transfer process and clear communication of results.
- **Stakeholder engagement** in a value transfer application may take several forms and occur at different stages of the process. Most importantly, engagement at the initial stage should be used to frame the value transfer in terms of the type of information required, relevance of different ecosystem services, geographic scope and identification of beneficiaries.
- Making the results of a value transfer accessible to the different stakeholders that use the information requires different types of **communications strategies**, different messages and different ways of presenting information. The main steps that should be part of a communication plan are identifying the audience(s), formulating the main message(s) and developing the communication tools.

Résumé à l'intention des décideurs

- Ce guide a pour objectif de montrer comment la valeur des services écosystémiques peut être estimée et prise en compte dans les mécanismes décisionnels. Plus précisément, il est conçu pour aider un large groupe de responsables de la conservation, de fonctionnaires gouvernementaux, de dirigeants du secteur privé, d'ONG et de statisticiens à comprendre les informations disponibles sur les valeurs des services écosystémiques et la façon dont ces informations peuvent être transférées pour étayer les décisions qu'ils prennent.
- Souvent, les services écosystémiques ne font pas l'objet d'échanges commerciaux, de sorte qu'il n'a pas de prix de marché reflétant leur valeur. Nous avons donc tendance à ne pas prendre en considération la valeur de ces services lorsque nous prenons des décisions qui ont des effets sur le milieu naturel. L'évaluation économique est simplement un moyen de montrer combien le milieu naturel nous est précieux.
- Les économistes ont mis au point diverses méthodes d'évaluation 'primaire' pour estimer la valeur des services écosystémiques qui ne sont pas échangés sur les marchés. Ces méthodes visent à répondre à l'ensemble des difficultés associées à la valorisation de services non marchands qui ont généralement les caractéristiques de biens publics et dont les liens avec l'environnement naturel sont complexes.
- La prise de décisions nécessite souvent de disposer d'informations rapidement et à faible coût. Or, la réalisation d'une nouvelle évaluation 'primaire' est en général longue et coûteuse et peut ne pas être toujours l'approche appropriée. Dans ces conditions, tout en reconnaissant l'importance des méthodes d'évaluation 'primaire', il est intéressant d'utiliser les informations recueillies dans le cadre d'évaluations 'primaires' existantes pour servir de base aux décisions courantes concernant des incidences sur les écosystèmes. Ce transfert d'informations sur les valeurs d'un contexte vers un autre est appelé transfert de valeurs (ou transfert d'avantages).
- Le transfert de valeurs est la procédure d'estimation de la valeur d'un service écosystémique présentant au moment considéré un intérêt pour les décideurs (sur un « site d'application ») en attribuant à ce service une estimation de la valeur établie ailleurs (sur « site d'étude ») pour un écosystème similaire.
- On distingue trois types principaux de méthodes de transfert de valeurs :
 - Le transfert de valeurs unitaires, qui repose sur les valeurs des services écosystémiques établies sur un site d'étude, exprimées sous forme de valeurs unitaires (généralement par unité de surface ou par bénéficiaire), auxquelles sont conjuguées des informations sur la quantité d'unités sur le site d'application de façon à estimer les valeurs unitaires sur ce site. Les valeurs unitaires peuvent être ajustées pour refléter les différences entre le site d'étude et le site d'application (par exemple, dans les niveaux de revenus et de prix).
 - Le transfert de fonctions, qui utilise une fonction de valeur estimée pour un site d'étude particulier, associée à des informations concernant les caractéristiques du site d'application, pour calculer la valeur unitaire d'un service écosystémique sur le site d'application. Une fonction de valeur est une équation qui relie la valeur d'un service écosystémique aux caractéristiques de l'écosystème et aux bénéficiaires du service en question.
 - Le transfert de fonctions de méta-analyse, lesquelles sont estimées à partir des résultats d'évaluations primaires multiples réalisées par plusieurs sites d'étude. Pour le transfert