



Cultural indicators of Indigenous Peoples' food and agro-ecological systems*

by
**Ellen Woodley, Eve Crowley, Jennie Dey de Pryck
and Andrea Carmen**



* Paper jointly commissioned by FAO and the International Indian Treaty Council (IITC), with support from the Government of Norway and, indirectly, from the Christensen Fund.

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

All rights reserved. Reproduction and dissemination of material in this information product for educational or other non-commercial purposes are authorized without any prior written permission from the copyright holders provided the source is fully acknowledged. Reproduction of material in this information product for resale or other commercial purposes is prohibited without written permission of the copyright holders. Applications for such permission should be addressed to: Chief, Electronic Publishing Policy and Support Branch, Communication Division, FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy or by e-mail to: copyright@fao.org

Quotations highlighting the close relationship between culture and Indigenous Peoples' traditional food systems

Gathered from Indigenous Peoples during the 2nd Global Consultation on the Right to Food and Food Security for Indigenous Peoples (Nicaragua, 7-9 September 2006).

“We would rather become extinct than lose our traditional food sources.”

“We are the land and the land is us.”

“To destroy the land is to destroy the people.”

“We are not the owners of land. We are the guardians.”

“The death of a traditional food system is the death of a nation...physically and culturally. We can and must protect and restore practices that can make us healthy and well as indigenous people.”

“If we are hungry, we do not just want to kill the hunger by eating three plates of food or eating the wrong quality of food. Our way of living and health are inextricably linked with our food and spirituality.”

“Trees are our brothers and sisters. We are of the same genealogical branch. When you understand this, you can understand what deforestation means for our well being.”

“Poverty is the lack of self-determination. Success is having the knowledge and skills for survival. The wealthiest among us are those that give the most and only take what they need. Life has its own spirits and humans, as part of creation, must respect those spirits.”

Acknowledgements

The authors are grateful to the many people who contributed to the preparation of this paper which was carried out under the overall technical guidance of Eve Crowley (FAO) and policy guidance of Andrea Carmen in her role as Sustainable Agriculture and Rural Development (SARD) Focal Point for the Indigenous Peoples' Major Group of Civil Society.

The issues addressed in the paper first emerged at the Indigenous Peoples' Consultation on the Right to Food: A Global Consultation (17-19 April 2002, Sololá, Guatemala), which was organized by the International Indian Treaty Council (IITC) with support from FAO. In 2003 and 2004 the IITC circulated a questionnaire among its members to determine Indigenous Peoples' own perceptions of cultural indicators and the factors they should encompass. Based on this questionnaire survey and subsequent discussions at the Fourth Session of the Permanent Forum for Indigenous Issues (UNPFII 4) in 2005, eight indicator categories were developed by the IITC.

Ellen Woodley, with some assistance from Caroline Dookie, then undertook the literature review, in order to provide substantive evidence for the appropriateness of these indicator categories. She prepared the first draft of the paper, drawing on the literature review and the results of the IITC survey. The executive summary of this first draft was discussed at the 2nd Global Consultation on the Right to Food and Food Security for Indigenous Peoples (7-9 September 2006, Bilwi, Puerto Cabezas, Nicaragua) where Indigenous Peoples' and UN representatives identified gaps in the indicator framework table presented in the paper, reached consensus on indicators that reflect the aspirations of Indigenous Peoples, and agreed on the next steps in the indicator programme. They also agreed to two additional indicator areas proposed by Ellen Woodley and adopted an eleventh area concerning food sovereignty. These eleven indicator areas were then consolidated into five overarching indicator areas. The event was coordinated by the IITC in its capacity as the Focal Point organization for SARD, Chapter 14 of Agenda 21 within the Indigenous Peoples' Major Group of Civil Society, recognized at UNCED (1992), and supported by the FAO-facilitated SARD Initiative with funding from the Government of Norway and the Christensen Fund.

The paper greatly benefited from constructive comments and inputs provided by the participants at the 2nd Global Consultation who included, among others, Ratnaker Bhengra, Andrea Carmen, Estebancio Castro Diaz, Ian Cherrett, Eve Crowley, Mirna Cunningham, Sonia Henriquez de Gernado, Teobaldo Hernández Thompson, Ron Lameman, Otilia Lux de Coti, Lucy Mullenkei, Emanuel Nengo, Evon Peter, Manuel Pino, Tarcila Rivera Zea, Ol-Johán Sikku, Paul Smith, Marcos Terena, Saúl Vicente Vásquez, Tui Aroha Warmenhoven and Ellen Woodley.

Valuable written comments were also provided on that draft by David Boerma, Karel Callens, Estebancio Castro, Ian Cherrett, Eve Crowley, Stéphane Dandeneau, Rosalud Delarosa, Danielle Dell'Orco, Jennie Dey de Pryck, Caroline Dookie, Adriana Herrera, Carol Kalafatic, Lidija Knuth, Margaret MacSems, Luisa Maffi, Denise Martinez, Frances Neely, Bernardo Peredo, Paola Termine, Fernanda Velasco and Patrizio Warren, while other comments and improvements were provided by Antonella Cordone, Tamara Jaramillo, Parviz Koohafkan, Stefania Menchinelli, and Sofia Naranjo.

The draft was then revised by Ellen Woodley to take account of these comments. It was subsequently further technically revised and partially restructured by Jennie Dey de Pryck who also added additional material from the literature and requested inputs from the FAO Right to Food Unit on Indigenous Peoples' right to food. The authors are grateful to Lidija Knuth for

providing these very useful inputs in collaboration with Margret Vidar. Further inputs from FAO studies for the Commission on the Legal Empowerment of the Poor are also acknowledged.

The paper was jointly commissioned by the FAO-facilitated SARD Initiative and the IITC, with financial support from the Government of Norway and, indirectly, from the Christensen Fund who supported the 2nd Global Consultation.

Table of contents

Executive summary.....	8
Chapter 1 Indigenous Peoples' food and agro-ecological systems: the need for cultural indicators.....	13
Chapter 2 Indigenous Peoples' rights.....	21
Chapter 3 Development indicators and their relevance to Indigenous Peoples.....	27
Chapter 4 Conceptual framework.....	32
Chapter 5 Priority areas identified by Indigenous Peoples for indicator development.....	37
5.1 Access to, security for and integrity of traditional lands, territories, natural resources, sacred sites and ceremonial areas used for traditional food production, harvesting and/or gathering and related cultural and ceremonial purposes.....	39
5.2 Abundance, scarcity and/or treats to traditional seeds, plant foods and medicines, and food animals as well as cultural practices associated with their protection and survival.....	45
5.3 Use and transmission of methods, knowledge, language, ceremonies, dances, prayers, oral histories, stories and songs related to traditional foods and subsistence practices, and the continued use of traditional foods in the daily diet as well as in relevant cultural/ceremonial practices.....	49
5.4 Capacity by Indigenous Peoples for adaptability, resilience and/or restoration of traditional food use and production in response to changing conditions including migration, displacement, urbanization and environmental changes.....	55
5.5 Ability of indigenous Peoples to exercise and implement their rights including self-determination and free, prior informed consent as well as their self-government structures, to promote and defend their food sovereignty and related aspects of their development.....	57
Chapter 6 Conclusions and recommendations.....	61

Boxes

Box 1 Culture as the fourth pillar of sustainable development.....	17
Box 2 Article 11 International Covenant on Economic, Social and Cultural Rights.....	23
Box 3 Poverty indicators in PRSPs: the case of Cameroon.....	30
Box 4 The Chixoy Dam legacy study.....	42
Box 5 Self-determination and conservation in Panama and Nicaragua.....	43

Tables

Table 1 Comparison of the two indicator lists developed at the 2nd Global Consultation on the Right to Food and Food Security for Indigenous Peoples: Cultural indicators for food security, food sovereignty and sustainable development	37
---	----

Figures

Figure 1 Plant diversity and language distribution.....	14
Figure 2 Sustainable livelihoods framework illustrating how culture cross-cuts all five livelihood assets.....	33

References.....64

Appendices

Appendix 1 Glossary of terms.....77

Appendix Table 1 Proposed cultural indicators for measuring the state and trends in Indigenous Peoples' food and agro-ecological systems, rights to food, food security and sustainable agriculture and rural development.....80

Appendix Table 2 Indicators table developed at the 2nd Global Consultation on the Right to Food and Food security for Indigenous Peoples.....86

Appendix Table 3 Consolidated indicators table developed at the 2nd Global Consultation on the Right to Food and Food Security for Indigenous Peoples.....94

Appendix Table 4 Indicadores culturales relevantes de soberanía alimentaria de los Pueblos Indígenas98

Executive summary

Purpose: The purpose of the paper is to contribute to the development, collection and use of cultural indicators of Indigenous Peoples' food and agro-ecological systems for policy, planning and advocacy purposes.

Audience: The intended users of this paper are Indigenous Peoples' Organizations (IPOs), Government departments responsible for data collection and statistics, UN agencies, NGOs, and other development actors.

Process of preparing the paper: Indigenous Peoples have expressed growing concern in international forums that most development planning aims to maximize economic development and rarely takes into account the reciprocal culture-land/resource relationships that are fundamental to Indigenous Peoples' food and livelihood systems and their well-being. These issues were taken up by the Indigenous Peoples' Consultation on the Right to Food: A Global Consultation (17-19 April 2002, Sololá, Guatemala). Organized by the International Indian Treaty Council (IITC) with support from FAO, the Consultation addressed the issue of cultural indicators within the context of Indigenous Peoples' right to food. In follow-up, with support from the FAO SARD Initiative, the IITC conducted a questionnaire survey in 2003-2004 to determine Indigenous Peoples' own views on cultural indicators, and the concerns they should address related to Indigenous Peoples' livelihoods, cultures, health and well-being, with a focus on the relationship between traditional cultural practices and food systems. In 2005, the Fourth Session of the Permanent Forum on Indigenous Issues also contributed to the collaborative work of the IITC and the FAO SARD Initiative in identifying priorities and developing criteria and methodologies for cultural indicators of food and agro-ecological systems that reflected Indigenous Peoples' perceptions of their situation and experiences. Based on the survey, a literature review and subsequent discussions, eight indicator categories were proposed for discussion at the 2nd Global Consultation on the Right to Food and Food Security for Indigenous Peoples (7-9 September 2006, Bilwi, Puerto Cabezas, Nicaragua). The Consultation was coordinated by the IITC and supported by the FAO-facilitated SARD Initiative with funding from the Government of Norway and the Christensen Fund. The executive summary of this paper was presented in draft form at the Consultation. An additional three indicator categories were also agreed upon by consensus, bringing the total to eleven. These were then consolidated at the Consultation into five main areas (see Appendix tables 1-3). This paper was subsequently revised, taking into account decisions made at the Consultation and peer-review comments on the draft.

Main issues: Globally, there are some 370 million Indigenous Peoples representing at least 5,000 different linguistic groups in more than 70 countries. Indigenous Peoples comprise about 5.5 percent of the world's population, yet they are disproportionately represented among the poor and food insecure, in both developed and developing countries. Indigenous Peoples' relationship with their traditional lands and territories forms a core part of their identity and spirituality and is deeply rooted in their culture, language and history. Since land and its resources form the basis of Indigenous Peoples' subsistence activities, losing control of these undermines their food and livelihood security and can threaten their survival as peoples. Furthermore, Indigenous Peoples' overall health, well-being and cultural continuity are directly related to their ability to eat traditional foods and continue their traditional food practices. These traditional foods and food practices are deeply intertwined with their cultures and value systems, and play an important role in religious ceremonies and spirituality, as well as in songs, dances and myths. While their agro-

ecological and food systems offer some signs of resilience and adaptation, a range of factors are increasingly threatening these systems and Indigenous Peoples' well-being.

The development of, and agreement on, a set of indicators which are able to measure impacts, relationships and interactions between culture and food and agro-ecological systems, can promote improved understanding, transparency and accountability between Indigenous Peoples and those working to assist and support them. Specifically, they are helpful to:

- Enable indigenous peoples to monitor the impacts of some key trends and development interventions on their lives;
- Assist public services, development practitioners, governments, NGOs and UN agencies to understand, recognize and respect dimensions of Indigenous Peoples' livelihoods that are important for them;
- Provide decision-makers with the key facts regarding the cultural dimensions of Indigenous Peoples' food and agro-ecological systems that are essential for sound and appropriate policy design;
- Ensure consistency between activities, goals, outcomes and a minimum acceptable standard in the policies and programmes that are intended to benefit Indigenous Peoples, ultimately forming the basis of a more rights-based, culturally-respectful partnership model for development;
- Ensure legitimacy and accountability to all stakeholders by identifying good practices, facilitating lesson-learning as well as measuring progress and achievements.

The paper reviews Indigenous Peoples' rights, including their right to food, as enshrined in various UN Declarations, Conventions and Covenants, and summarizes the current work undertaken by UN and some other international organizations as well as some national agencies in using cultural and related indicators that are being or could be applied to Indigenous Peoples. A modified version of the Sustainable Livelihoods framework is proposed as a tool for understanding the relationships between culture and food and agro-ecological systems and the ways these interact with the natural environment and the policy and institutional context to influence livelihood, food security and well-being outcomes.

The indicator areas and main findings: The substantive discussion that forms the core of the paper (chapter 5) addresses the five consolidated indicator areas (the original eleven areas are also discussed under the appropriate consolidated indicator area). Evidence from the literature highlighted the following issues for which cultural indicators to assess trends and impacts on Indigenous Peoples already exist (but may need to be more widely used) or need to be developed:

1. Access to, security for and integrity of lands, territories, natural resources, sacred sites and ceremonial areas used for traditional food production, harvesting and/or gathering and related cultural and ceremonial purposes. The 2007 UN Declaration on the Rights of Indigenous Peoples and the 1989 ILO Convention No. 169 call on states to respect indigenous lands and territories and proclaim the right of Indigenous Peoples to control their natural resources. Security of tenure, which is crucial to Indigenous Peoples' cultural identity and well-being, can be enhanced through recognition of customary tenure rules and practices. Common property regimes provide a basis for shared identity and livelihoods and have been found to contribute to the health status of communities. However, land privatization, titling and registration programmes can have negative impacts on tenure security and environmental

management. Privatization or the granting of concessions by governments or even by Indigenous Peoples themselves to commercial enterprises for logging, mineral and oil exploitation, hydro-electric dams, plantations or designation as national parks frequently destroys their traditional food and agro-ecological systems and their cultural identity. At the same time, they are often deprived of any compensation. Although the right to self-determination is recognized in the UN Declaration, Indigenous Peoples are rarely consulted during the design of land or water development or conservation programmes or invited to participate in co-stewardship management arrangements. The introduction of individualized land holdings in indigenous areas, forced resettlement, compensation, registration of household heads for taxation or benefit-sharing purposes, and the availability of jobs in extractive industries have all tended to favour men over women. The result has been a marked erosion of indigenous women's rights and resulting poverty and loss of status. Finally, Indigenous Peoples' access to sacred sites in their traditional territories is important for the continuation of their cultural practices. Sacred sites are preserved and maintained through culturally-based traditional management practices that protect certain species and habitats and mitigate environmental disturbances such as floods, droughts and fires. In some areas, however, traditions of maintaining ancient sacred sites are being eroded, leading to the loss of biodiversity.

2. Abundance, scarcity and/or threats to traditional seeds, plant foods and medicines, and food animals, as well as cultural practices associated with their protection and survival. The protection and sustainable management of biodiversity represent an integral part of risk avoidance mechanisms in indigenous societies. Most traditional food systems of Indigenous Peoples contain at least 70-100 species of traditional food plants. The Convention on Biodiversity (CBD) recognizes that traditional and direct dependence on renewable resources and ecosystems, including sustainable harvesting, continues to be essential to the cultural, economic and physical well-being of Indigenous Peoples and their communities. However, development does not necessarily erode traditional ecological knowledge as many societies are able to incorporate market-oriented production within their traditional resource management systems. Nonetheless, there is concern that the use of genetically modified (GM) seeds could undermine the livelihoods of Indigenous Peoples. Genetic Use Restriction Technologies (GURTs), colloquially known as 'terminator seeds' could lead to: the possible loss of local crop varieties, locally-adapted genetic material and wild relatives; the displacement of traditional farming systems and the social, cultural and spiritual dimensions associated with these, including the storage, exchange and cultural uses of seeds and seed-bearing plants; and limits on the rights and prerogatives of indigenous and local communities with regard to traditional knowledge and community cultural values. Currently, there are insufficient data on the impact of GURTs on agricultural biodiversity and key ecosystem functions thus, in the meantime, the precautionary principle should apply. The destruction of forest cover, wetlands and other uncultivated areas for pastures or cultivation can also lead to a decline in agricultural biodiversity through the loss of 'wild' relatives of crop plants, birds, fish and livestock breeds. Cash cropping systems based on monocultures may increase economic productivity for large farmers but may prove inefficient in the long term with pest infestation or as environmental conditions fluctuate. This is where time-tested traditional crops may in some cases be the most suitable for local ecological conditions. Finally, there is concern that the WTO Agreement on Agriculture (AOA) has allowed the entry of cheap agricultural imports into indigenous communities, undermining local production and their associated integrated and ecologically balanced agricultural practices.

3. Use and transmission of methods, knowledge language, ceremonies, dances, prayers, oral histories, stories and songs related to traditional foods and subsistence practices, and the continued use of traditional foods in daily diet as well as in relevant cultural/ceremonial practices. Disruptions to traditional subsistence activities can restrict Indigenous Peoples'

capacity to protect their nutrition and health. Development processes often lead to dietary changes that result in increased chronic conditions such as obesity and diabetes. Such consequences could be reduced with more attention to cultural dietary and health principles, and with recognition of the nutrient properties of traditional food resources. Ceremonies, oral traditions such as stories, songs and oral histories and other cultural practices such as reciprocity, are important cultural elements in the maintenance and transmission of knowledge and practices of traditional food and agro-ecosystems. The loss of these cultural practices creates a disconnect in the relationship between culture and traditional food systems. However, the impacts of development processes on these culture-food relationships are mixed. Linguistic and cultural diversity have been threatened by processes of globalization (such as acculturation, market expansion, biodiversity loss) as well as through education and assimilation policies and programmes. The loss of indigenous languages can undermine their ability to maintain their traditional knowledge and food systems. Endogenous institutions play an important role in ensuring the continuity of traditional food systems and agro-ecosystems through the transmission of related traditional knowledge, beliefs and practices across generations, while taking into account the fact that culture is dynamic and changing. In this context, it is critical to identify factors that interfere with or provide opportunities for elders to pass on their knowledge to the youth as well as to identify skills, traditional knowledge and practices that are no longer appropriate to the changing environment

4. Capacity by Indigenous Peoples for adaptability, resilience, and/or restoration of traditional food use and production in response to changing conditions including migration, displacement, urbanization and environmental changes. Rapidly increasing rural-urban migration provides a major challenge to Indigenous Peoples' adaptive capacity in all regions of the world. The reasons for migration are varied and include the pull factors of urban amenities and employment and push factors such as conflict, forced relocation due to land appropriation (for example, for mining, oil exploration or logging), ecological changes including climate change, and economic necessity. The move to an urban environment, severing the connection with the traditional ecosystem and its related culturally-based knowledge and practices can result in serious acculturation. The capacity of Indigenous Peoples or communities to adapt to changing circumstances such as expansion in the market economy, dramatic price fluctuations, new job opportunities in urban areas, loss of traditional land or waterways to mineral or oil exploitation, logging, plantations or national protected areas, changing political structures, schooling, environmental degradation and pollution, and climate change varies according to many factors, including the type, severity and suddenness of the change, threat or risk, their access to resources, the policy environment and the degree of organization and preparedness.

5. Ability of Indigenous Peoples to exercise and implement their rights including self-determination and free, prior and informed consent, as well as their self-government structures, to promote and defend their Food Sovereignty and related aspects of their development. Indigenous Peoples' organizations are concerned that various types of development activities have had negative impacts on indigenous communities' traditional food and agro-ecosystems. Such impacts can only be avoided if development programmes are carried out with the free, prior and informed consent (FPIC) of the indigenous communities with traditional rights to the lands, territories or resources concerned. Indigenous Peoples are often insufficiently aware of their rights, particularly those related to Intellectual Property Rights (IPR) and Access and Benefit-Sharing (ABS) as laid down in various UN treaties and conventions. Conventionally, IPRs are conferred upon individuals and corporate entities, and are not applicable in cases of community ownership or spiritual significance of traditional knowledge. However, Article 29 of the (non-binding) 2007 UN Declaration on the Rights of Indigenous Peoples states that Indigenous Peoples are entitled to the recognition of the full ownership, control and protection of their cultural and intellectual property. They have the right to special measures to

control, develop and protect their sciences, technologies and cultural manifestation, including human and other genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, inland waterway and deep seabed genetic resources, oral traditions, literatures, designs and visual and performing arts. However, these rights are often not respected. Furthermore, at its VI session in April 2002, the Conference of the Parties to the Convention on Biological Diversity adopted the Draft Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization. Although they are not binding, they have the potential to influence the development of national access and benefit-sharing laws. However, so far, national access and benefit-sharing measures have often failed to compensate Indigenous Peoples adequately and there is an urgent need to develop fair benefit-sharing with indigenous communities.

Indicators: The discussions of the issues related to indicator development in each of these five indicator areas concluded with a brief review of specific existing or potential indicators to measure trends or the impacts of changes.

Conclusions and recommendations: Indigenous Peoples' cultural practices and traditional food systems are mutually supportive and both are vital for their food security and overall well-being, yet these systems are being degraded or destroyed for a number of reasons discussed in the paper. Confronted with this situation, Indigenous Peoples are increasingly conscious of the need to engage in policy dialogue and negotiations with decision-makers to protect their rights and their food and agro-ecological systems and to restore them where needed. For this, they need good, reliable data to support their arguments. While a number of UN bodies and specialized agencies, government agencies and NGOs are involved in the development of relevant indicators, actual data on Indigenous Peoples' well-being remain scarce. Hence, the need to develop indicators that reflect their particular vision and to collect and analyze data on these indicators. Recommendations are proposed for all stakeholders, as well as specific recommendations for governments, UN organizations and Indigenous Peoples' organizations, with a view to improving the development and application of cultural indicators to Indigenous Peoples' food and agro-ecological systems.

Chapter 1

Indigenous Peoples' food and agro-ecological systems: the need for cultural indicators

1.1 Introduction

Globally, there are some 370 million Indigenous Peoples representing at least 5,000 different linguistic groups in more than 70 countries (UNESCO 2003, Millennium Ecosystem Assessment, 2005, UNFII, 2007a). Indigenous Peoples comprise about 5.5 percent of the world's population, with Asia home to about two-thirds of the indigenous communities. While Indigenous Peoples often represent the minority population in a country,¹ they constitute about 70-80 percent of the world's cultural diversity (IUCN, 1997). By economic measures, Indigenous Peoples are disproportionately represented among the poor and food insecure, in both developed and developing countries (Psacharopoulos and Patrinos, 1994, Carino, 2005, UNPFII, 2005a).

Indigenous Peoples' relationship with their traditional lands and territories forms a core part of their identity and spirituality and is deeply rooted in their culture, language and history. The "rationale for talking about who they are is tied to the land. They have clear symbols in their language that connect them to places on their land" (UNPFII, 2007b). Such spiritual, ancestral and linguistic ties to the land and marine environments are rarely shared by others who utilize resources primarily for economic return (Mühlhäusler, 1996, Posey, 1999, Nations, 2001). Since land and its resources form the basis of Indigenous Peoples' subsistence activities, losing control of these undermines their food and livelihood security and can threaten their survival as peoples.

Furthermore, Indigenous Peoples' overall health, well-being and cultural continuity are directly related to their ability to eat traditional foods and continue their traditional food practices. These traditional foods and food practices are deeply intertwined with their cultures and value systems, and play an important role in religious ceremonies and spirituality, as well as in songs, dances and myths. All these practices have been enriched over the centuries through the abundant biodiversity in their habitats which they have conserved, protected and managed in order to produce foods and medicinal plants that are appropriate to specific micro-environments and well adapted to changing agro-ecological and climatic conditions. As the custodians of biodiversity, Indigenous Peoples have often sought to transmit their traditional knowledge and genetic resources from generation to generation. Although the relationship is not causal, sometimes cultural and biological diversity are correlated. For example, the Amazon River Basin is home to about 400 different indigenous groups. While the land accounts for just 7 percent of the world's surface area, it harbours more than half its biodiversity (IFAD, date n.a.).

¹ In several countries, however, Indigenous Peoples account for a large majority of the population, as, for example, in the Latin American Andean countries, where some of the largest indigenous groups are the Aymara and Quechua Indians. In Bolivia alone, these Peoples represent 25 and 30 percent respectively of the total national population of 8 280 000 in 2000 (Encyclopedia of the Nations, 2007).

1.2 Opportunities for and threats to Indigenous Peoples' food and agro-ecological systems

While these traditional food and agro-ecological systems have adapted to change over the centuries, they now seem fragile in the face of the accelerating change processes of the twenty-first century. Nonetheless, in some cases, these systems offer examples of **resilience** and **opportunities** for adaptation. Indigenous Peoples' unique traditional knowledge and role in maintaining biological and cultural diversity (IFAD, 2003) can, moreover, provide the basis for an alternative paradigm of co-creation and co-stewardship to address the threats of climate change and ensure a more sustainable future for the planet (P. Roy, personal communication, 2007).

Research has shown that certain cultural practices and knowledge maintain or enhance biodiversity and that the preservation of these cultures and languages is closely tied to the preservation of biodiversity and agro-biodiversity (Mühlhäusler, 1996, Fairhead and Leach, 1996, Posey, 1999, Lizalde, 2001, Maffi, 2001, Borrini-Feyerabend *et al.*, 2004). For example, indigenous traditional farming systems are characterized by high plant diversity, which minimizes risk and maximizes returns under low levels of technology and limited resources (Richards, 1985, cited by Altieri, 1995). Sacred forests, where access is restricted, are protected areas with resulting high biodiversity (Chouin, 2002). Dependence on traditional crop varieties, non-domesticated resources and gathered foods serves to stimulate biodiversity conservation, not destroy or homogenize it (Thrupp, 1998).

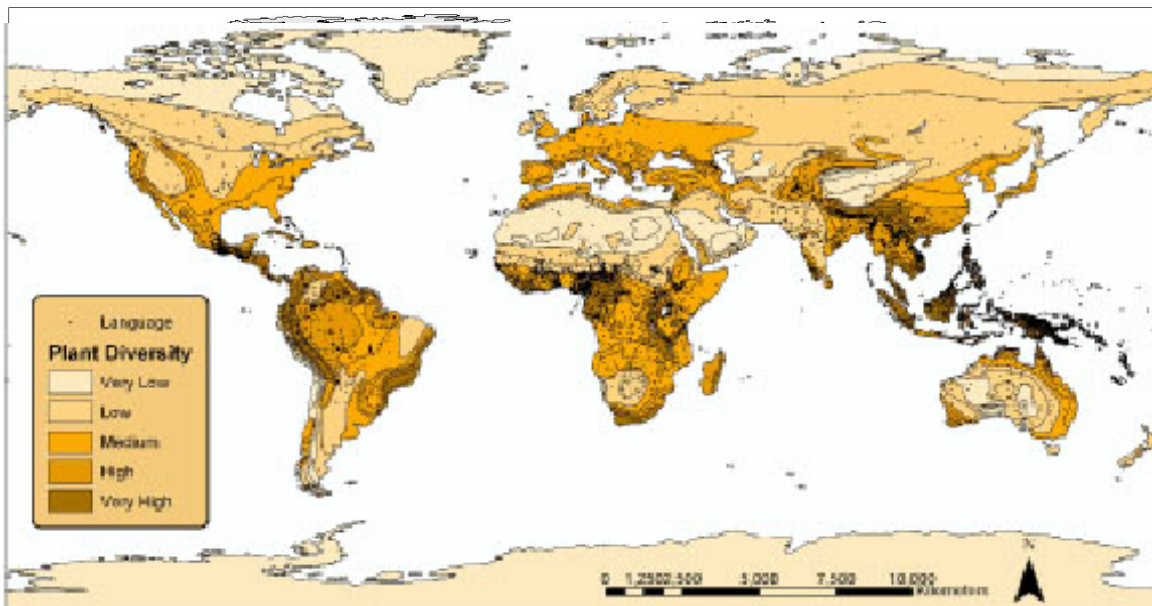


Figure 1 Plant diversity and language distribution

From Stepp, J.R. *et al.*, 2004, based in part on data from Barthlott, W. *et al.*, 1999.

Note: languages are indicated by a black dot, and so darker areas indicate high language/cultural diversity.

However, in other cases development policies and programmes that favour private sector development and/or attempt to “modernize” indigenous systems to fit an imposed development

paradigm are undermining or even destroying these traditional systems. Furthermore, forces of globalization and climate change are having impacts on Indigenous People's food and agro-ecological systems that often seem of little concern to governments or are beyond the control of both governments and Indigenous Peoples. What then are the main **threats** to the sustainability of Indigenous Peoples' food and agro-ecological systems, and the implications for their culture and identity?

First, a development model that emphasizes economic growth and ignores or disparages cultural considerations constitutes a major threat. There is a need for a culturally-sensitive development paradigm that values biological and cultural diversity, and a more holistic concept of well-being (Kurien, 2001, Rao and Walton, 2004, UNPFII 2005a).

Second, without the free, prior and informed consent of Indigenous Peoples, very substantial areas of their traditional lands and territories have been privatized or made available to commercial enterprises through concessions, for logging, plantations, exploitation of minerals, oil, gas and coal reserves, hydro-electric power plants, or as protected areas or national parks. This threat is likely to increase as many Indigenous Peoples' territories still constitute large reserves of these resources (UNPFII, 2005a, Tauli-Corpus and Tamang, 2007).

Third, although many countries have introduced constitutional and legal reforms to ensure legal recognition of Indigenous Peoples' right to protect and control their lands, territories and resources and maintain their customary laws (with Latin America leading the way), land-titling procedures are often slow and complex, and titles awarded to communities are not always respected in practice. (UNPFII, 2007b)

Fourth, the environmental and genetic sustainability of ecosystems inhabited by Indigenous Peoples is being threatened by industrial mining and the resulting contamination of forests, pastures, crop land, waterways and underground aquifers. Agricultural development programmes introducing non-traditional (cash) crops, including genetically modified crops, that rely heavily on the use of toxic agro-chemicals have also caused considerable pollution (Stephens *et al.*, 2006). Forests have often been cleared to make way for pastures for extensive livestock raising or for (cash) monocropping, replacing the multi-level cropping systems that provide ground cover and improve soil texture and fertility. These types of activities have often led to soil erosion on a massive scale. The introduction of genetically modified seeds, monocropping and high-yielding domesticated animals is destroying the rich biodiversity, leading to the extinction of some seed varieties and animal species. All of these factors contribute to the destruction of Indigenous Peoples' ecosystems, undermining their capacity to maintain the cultivation, fishing, hunting and gathering of the traditional foods essential for their well-being and the maintenance of the environment as well as their spiritual, ceremonial and cultural values and practices (UNPFII, 2005b).

Fifth, climate change has uneven effects. Agricultural zones will gradually shift from tropical to temperate so a loss in one area will thus be a gain for other areas. Climate change has brought some benefits; for example, in southern Greenland, the growing season is a month longer and people have begun to plant small gardens. However, the negative impacts are considerably more serious. Melting ice in Arctic regions, for instance, is having negative impacts on Indigenous Peoples whose technologies and hunting skills are not adapted to the present, rapidly changing

conditions, resulting in some communities facing extinction.² The diverse genetic rice varieties of the Subanen community in Lakewood, western Mindanao in the Philippines are threatened with extinction due to extreme climatic changes. By 2001 75 percent of their rice varieties had disappeared due to drought in 1997-98 followed by three years of heavy rains (Suminguit, 2005). Similar patterns are being repeated in many countries as the incidence of climate change-induced disasters such as rising temperatures, floods, droughts, hurricanes, and tsunamis is increasingly undermining people's livelihoods and either destroying or forcing significant changes in farming, livestock, forestry and fishing practices.³

Sixth, the impacts of globalization, often reinforced by development programmes, have also resulted in a shift in many indigenous communities from a varied traditional diet to a limited number of foods, often highly processed and even contaminated, that are sold commercially. Reliance on these foods has often impoverished Indigenous Peoples' nutritional status, resulting in increased obesity, diabetes, vulnerability to diseases and defects in children's development (Stephens *et al.*, 2006). Although the traditional food systems are often rich in micronutrients, these have been poorly analysed by scientists and are often neglected by health and nutrition programmes (Kuhnlein *et al.*, 2006).

Seventh, Indigenous Peoples' traditional knowledge and genetic heritage are often exploited for commercial gain, particularly with the expansion of biotechnology for medicines, while they receive few or no material benefits and often risk resource depletion and the loss of their food sovereignty. The Convention on Biological Diversity (CBD) established principles governing access to and benefit-sharing from genetic resources and traditional knowledge. Some efforts are being made to incorporate these into the international intellectual property regime. Paramount are the requirements to obtain the free, prior and informed consent of Indigenous Peoples for the use of their traditional knowledge and/or genetic resources, and to establish arrangements to share the benefits from such developments. Despite examples of fair benefit-sharing, many governments and private companies do not respect these principles (Dutfield, 1995, Stavenhagen, 2004, UNPFII, 2007b). Indigenous Peoples are often not aware of their rights and rarely have the financial means necessary to bring legal action to assert these rights.

Eighth, Indigenous Peoples who live in countries where there are military conflicts are usually less protected than the rest of the population from the warring parties, and are thus more vulnerable to physical dislocation, destruction of their ecosystems, and loss of their livelihood and food security, land and sacred sites. These situations can also destroy their cultural identity and existence as peoples (Amnesty International, 2001, Stavenhagen, 2007).

1.3 Culture and development

For many years, the complex socio-cultural characteristics of indigenous and local communities' agro-ecosystems were viewed as obstacles to change. Based on mistaken notions of the 'tragedy of the commons' theory, the common property systems which are fundamental to Indigenous Peoples' resource management practices were often considered to be major causes of resource depletion. For example, Indigenous Peoples were often held responsible for overgrazing, which

² In 2005 the Government had to fly emergency food to northern Greenland for starving hunting dogs, and the Inuit hunting communities face extinction (The Guardian Weekly, 5 October 2007).

³ Because of the growing concern about the effects of climate change on Indigenous Peoples' environments and ways of life, the Seventh Session of the UNPFII (21 April – 2 May 2008) will be dedicated to the special theme: Climate change, bio-cultural diversity and livelihoods: the stewardship role of indigenous peoples and new challenges (www.un.org/esa/socdev/unpfii).

can be a causal factor in the desertification of grasslands or the destruction of the world's forests. Privatization of resource rights was thus considered necessary for sound ecological management (Riddell, 2000). The ecologically sound basis of Indigenous Peoples' customary land rules and practices was not appreciated. From the 1960s onwards, development was conventionally thought of in terms of knowledge transfer from industrialized to underdeveloped countries (Stavenhagen, 2000). The futility of this approach, however, soon became apparent in the many failures of the 'techno-economic' paradigm of development (Kurien, 2001).

Development policy deliberations are now beginning to give explicit recognition to the importance of culture for development. The UN Educational, Scientific and Cultural Organization (UNESCO), for example, has developed a holistic view of development, emphasizing the indivisibility of culture and development. The World Bank has acknowledged a constrained worldview, based on economics, and now recognizes that culture should be taken into account in examining the challenges of development and assessing the demands of sound economic strategies (Rao and Walton, 2004). Increasingly there are calls for recognition of culture as a fourth pillar of sustainable development which both stands on its own and also influences the other three pillars – economic, social and environmental – that were adopted in the Rio Agenda 21 (see Box 1).

Box 1 Culture as the fourth pillar of sustainable development⁴

- 1) The **economic** pillar represents markets (e.g. for cash and food crops, inputs), food availability, income, productivity, food prices, etc. In this case, culture defines values of what is exchanged/marketed, who is involved in exchanges, where exchanges take place and traditional systems of exchange and reciprocity.
- 2) The **environmental** pillar of sustainable development includes the biophysical aspects of life, such as ecosystem services (biodiversity, water quality, carbon sequestration, soil fertility etc), as well as climate change and natural hazards. In this case, culture defines what part of and how the environment is used, how people respond to climate variability/shocks, knowledge of and values associated with the environment.
- 3) The **social** pillar, which includes organization of labour (rights, obligations and responsibilities between people), land, natural resources and capital to produce, obtain, distribute and conserve food and manage agricultural resources, as well as the ability to influence others, protect rights to self-determination and assert rights and capacity to govern. It is difficult to distinguish culture from this pillar and culture is often subsumed under the social and not given separate recognition.
- 4) The **cultural** pillar includes preferences for crops and foods, knowledge about food, agro-ecosystems and landscapes, attitudes and values, why people organize, the value/prestige/incentives gained from involvement in some social organizations, worldview, spiritual and ceremonial values and practices, self-identity and language. Most of these are non-material and not necessarily utilitarian – in other words, they are not created for specific purposes unlike social organizations.

Despite growing recognition of the importance of culture in development, many development interventions are still in need of policy support that minimizes negative impacts on Indigenous Peoples' cultural integrity while building on their strengths as stewards of bio-cultural diversity.⁵

⁴ Developed by E. Crowley, personal communication, 2006.

⁵ The concept of "civic agriculture" coined by Thomas Lyon (2004, cited by DeLind and Bingen, 2004), which stresses the importance of socio-economic relationships and institutions in sustainable development and questions "productionist and mechanistic" models of food and farming systems, may be illuminating in culturally-sensitive local development initiatives. It considers the development of local markets as an integral part of the local economy, is concerned more with quality than quantity, adding value to local products which are ecologically and socio-culturally appropriate to the region, is land- and labour-intensive, site-specific and relies heavily on the knowledge and meanings that belong to and evolve within a particular place.

In this respect, it is useful to keep in mind Indigenous Peoples' own concept of development, as expressed at the 2006 2nd Global Consultation on the Right to Food and Food Security for Indigenous Peoples:

“Development with identity is the project of life of the Indigenous Peoples based on their own logic and worldview. It is the natural growth of Indigenous Peoples, of their flora and of their fauna based on principles of self-determination in relation to land, territories, and natural resources. It is also respect for their individual and collective rights. It is the welfare and security of our peoples.”

1.4 The role of cultural indicators

Most development planning aims to maximize economic development and welfare and rarely takes into account the reciprocal culture-land/resources relationships which are fundamental to Indigenous Peoples' food and livelihood systems. Thus, conventional definitions of poverty⁶ and the indicators used to measure poverty, such as those used by the Commission on Legal Empowerment of the Poor (CLEP), as well as the indicators used to measure progress towards the Millennium Development Goals (MDGs), do not reflect the complexity of Indigenous Peoples' realities and priorities. They also do not reflect their livelihood strategies and cultures and related values. Furthermore, cultural statistics largely deal with the production and consumption of “cultural goods”, such as films, books and theatre, largely neglecting other aspects of culture such as traditions, ceremonies, food systems and values that interact to define a peoples' or a community's cultural identity. For Indigenous Peoples it is essential to frame the MDGs and other indicators of well-being as *human rights-based*, in order to ensure that development processes take into account basic *rights* to land and resources, culture, identity and self-determination (Tauli-Corpuz, 2005, Commonwealth Foundation, 2005).

The development of, and agreement on, a set of indicators which are able to measure impacts, relationships and interactions between culture and food and agro-ecological systems, can promote improved understanding, transparency and accountability between Indigenous Peoples and those working to assist and support them. Specifically, they are helpful to:

- Enable indigenous peoples to monitor the impacts of some key trends and development interventions on their lives;
- Assist public services, development practitioners, governments, NGOs and UN agencies to understand, recognize and respect dimensions of Indigenous Peoples' livelihoods that are important for them;
- Provide decision-makers with the key facts regarding the cultural dimensions of Indigenous Peoples' food and agro-ecological systems that are essential for sound and appropriate policy design;
- Ensure consistency between activities, goals, outcomes and a minimum acceptable standard in the policies and programmes that are intended to benefit Indigenous Peoples, ultimately forming the basis of a more rights-based, culturally-respectful partnership model for development;

⁶ Refer to glossary in Appendix 1 for definitions used in this paper.

- Ensure legitimacy and accountability to all stakeholders by identifying good practices, facilitating lesson-learning as well as measuring progress and achievements.

A number of methodological problems also need addressing in order to ensure more effective coverage of Indigenous Peoples' situations in national surveys and censuses. For example, socio-economic data collected in population censuses or household surveys are rarely disaggregated by indigenous/non-indigenous population categories. There is also a need to address the methodological problems related to the collection of data specific to the conditions of Indigenous Peoples (Tchoumba, 2005, UNESCO, 2000). Furthermore, there are analytical challenges in using qualitative data and converting information into statistically useful numbers (UNDP, 2004).

Scale and time are also important considerations in using indicators to measure human-environment relationships. Changes in geographical scale, from local to regional or global levels may significantly influence the questions posed and the information analyzed. For example, local and traditional knowledge reveals information and understanding that is not measurable at the global level (Ericksen and Woodley, 2005). Cultural indicators often need to be context-specific. Studies of cultural influences on subjective indicators of well-being, for instance, have shown that the determinants of life satisfaction and well-being in one culture are not necessarily the same in another culture (Moore, Young-Leslie and Lavis, 2005). In Cameroon, for example, the Baka of Yokadouma or Moloundou, who still depend essentially on the forest and its resources for survival have a different perception of poverty from the Bagyeli of Kribi for whom agriculture is more significant or the nomadic Mbororo herdsman (Tchoumba, 2005). There are problems with assuming universal needs and transferring a research design which assumes a basic value consensus in society (i.e. on what poverty is). This underscores the need for each indigenous community, tribe, village or Nation to select the cultural indicators specific to their conditions and experience in order to take account of cultural specificities and their changing dynamics (IITC, 2003). Nonetheless, general indicators are important for policy development and to monitor the trends in the socio-economic and cultural conditions of Indigenous Peoples.

Concerned by the lack of adequate cultural indicators on Indigenous Peoples' food and agro-ecological systems, the issue was taken up by the 1st Indigenous Peoples' Global Consultation on the Right to Food (Sololá, Guatemala, 17-19 April 2002). Organized by the International Indian Treaty Council (IITC) with support from the FAO, the Consultation addressed the issue of cultural indicators within the context of its discussion on the Indigenous Peoples' right to food. Two cross-cutting themes were identified: (i) the inter-relationships between the practices and cultural activities associated with traditional subsistence foods. In essence, how the integrity of traditional cultures is inter-dependent with local, traditional food systems⁷; and (ii) the negative impact that development programmes can have on indigenous communities if they are imposed without consultation, agreement or participation by the community.

In follow-up, with support from the FAO SARD Initiative, the IITC conducted a survey in 2003 to determine Indigenous Peoples' own views on cultural indicators, and the concerns they should address related to Indigenous Peoples' livelihoods, cultures, health and well-being, with a focus on the relationship between traditional cultural practices and food systems.⁸ In 2005, the Fourth

⁷ Quotations that describe this relationship, gathered from Indigenous Peoples during the 2nd Global Consultation on the Right to Food and Food Security for Indigenous Peoples, Bilwi, Puerto Cabezas, Nicaragua, 7-9 September 2006, are given at the beginning of this paper.

⁸ A total of 115 questionnaires from respondents in 28 countries were received and analyzed. These activities were carried out in coordination with and the support of the UN Food and Agriculture Organization (FAO) and the Sustainable Agriculture and Rural Development (SARD) Initiative.

Session of the Permanent Forum on Indigenous Issues also contributed to the collaborative work of the IITC and the FAO SARD Initiative in identifying priorities and developing criteria and methodologies for cultural indicators of food and agro-ecological systems that reflected Indigenous Peoples' perceptions of their situation and experiences. Based on the survey, a literature review and subsequent discussions, eight indicator categories were proposed for discussion at the 2nd Global Consultation on the Right to Food and Food Security for Indigenous Peoples (7-9 September 2006, Bilwi, Puerto Cabezas, Nicaragua). An additional three indicator categories were also agreed upon by consensus, bringing the total to eleven (see Appendix tables 1 and 2). These were then consolidated at the Consultation into five main areas (see Appendix table 3). An example of a possible application of these indicator areas in Nicaragua is given in Appendix table 4.

1.5 Purpose of the report

The intended users of this report⁹ are Indigenous Peoples Organizations (IPOs), Government departments responsible for data collection and statistics, UN agencies, NGOs, and other development actors. Its aim is to contribute to the development, collection and use of cultural indicators of Indigenous Peoples' food and agro-ecological systems for policy, planning and advocacy purposes. To this end, it specifically sets out to:

1. Draw on evidence from the literature to provide a framework for articulating the complex relationships between Indigenous Peoples' traditional food and agro-ecological systems and their cultures, and the ways in which development processes and the exercise of the right to self-determination impact on these relationships and on Indigenous Peoples' food security and well-being;
2. Present a literature review of the use of cultural indicators in development and provide practical recommendations to inform future development programmes and policy initiatives of UN agencies, including FAO, concerned with the livelihoods of Indigenous Peoples;
3. Examine the indicator areas proposed by Indigenous Peoples, and drawing on the literature, identify other key areas for indicator development; and
4. Make broad recommendations for research and policy design to ensure the development and use of more culturally-sensitive indicators of development, with particular reference to Indigenous Peoples' food and agro-ecological systems.

⁹ The executive summary of this paper was presented in draft form at the 2nd Global Consultation on the Right to Food and Food Security for Indigenous Peoples, Bilwi, Puerto Cabezas, Nicaragua, 7-9 September 2006. The purpose of the Consultation was to bring together Indigenous Peoples' and UN representatives to identify gaps in the indicator framework table presented in this paper, reach consensus on indicators that reflect the aspirations of Indigenous Peoples, and agree on the next steps in the indicator programme. The event was coordinated by the IITC in its capacity as the Focal Point organization for SARD, Chapter 14 of Agenda 21 within the Indigenous Peoples' Major Group of Civil Society, recognized at UNCED (1992), and supported by the FAO-facilitated SARD Initiative with funding from the Government of Norway and the Christensen Fund (www.fao.org/sard/initiative).

Chapter 2

Indigenous Peoples' rights

2.1 The United Nations and Indigenous Peoples' rights

Several UN declarations, covenants and conventions include articles that are supportive of Indigenous Peoples rights even though some do not refer specifically to Indigenous Peoples.¹⁰ The earliest of these, the 1948 Universal Declaration on Human Rights, starts its Preamble with the “recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family...”. Although the Declaration is not a binding treaty, international lawyers consider that it forms part of customary international law and is a key tool in applying diplomatic and moral pressure on governments violating any of its provisions. In response to the non-binding nature of the Declaration, two binding Covenants that further developed some of the issues in the Declaration were adopted in 1966: the International Covenant on Civil and Political Rights (ICCPR) and the International Covenant on Economic, Social and Cultural Rights (ICESCR). Article 1 is identical in both Covenants and states that “All peoples have the right to self-determination. By virtue of that right they may freely determine their political status and freely pursue their economic, social and cultural development. All peoples may, for their own ends, freely dispose of their natural wealth and resources... In no case may a people be deprived of its own means of subsistence.” This Article is regarded by Indigenous Peoples as a key commitment by States Parties to recognize and protect their right to self-determination and the other rights that flow from this over-arching right.

While the Declaration and Covenants apply to all peoples, the International Labour Organization (ILO) has adopted two international legal instruments that specifically deal with Indigenous and Tribal Peoples' rights: the Indigenous and Tribal Populations Convention, 1957 (No. 107) and the Indigenous and Tribal Peoples Convention, 1989 (No. 169). Convention No. 107 is no longer open for ratification but remains in force in 18 countries. Designed to replace the earlier Convention, Convention No. 169 has been ratified by 19 countries as of September 2007.

Convention No. 169 stipulates that Indigenous and Tribal Peoples “shall enjoy the full measure of human rights and fundamental freedoms without hindrance or discrimination” (Article 3.1). The Convention also states that Indigenous and Tribal Peoples “shall have the right to decide their own priorities for the process of development as it affects their lives, beliefs, institutions and spiritual well-being and the lands they occupy and otherwise use, and to exercise control, to the extent possible, over their own economic, social and cultural development” (Article 7.1). It contains seven Articles on land, stipulating, *inter alia*, that their individual and collective rights to their traditional lands, territories and natural resources should be protected (Article 14). In cases in which the State retains the ownership of mineral or other resources in their lands, governments should consult the concerned peoples before exploiting these resources and the peoples concerned should participate in the benefits or receive fair compensation for damages they sustain as a result of such activities (Article 15). Other Articles deal with rights to employment, vocational training, handicrafts and rural industries, social security, health and education and provisions relating to participation in decision-making and consultation (MacKay, 2004, ILO, 2007).

¹⁰ These are clearly summarized in a paper by MacKay, F., 2004.

While Convention No. 107 has similar provisions with regard to land, territories and resources, Convention 169 constitutes a revision that takes account of developments in the situation of Indigenous and Tribal Peoples, and removes the orientation towards assimilation of the earlier Convention.

Convention 169 is the most comprehensive instrument of international law for the protection of Indigenous and Tribal Peoples' rights to preserve their own laws and customs. It has been influential in the revision of national constitutions (for example, Bolivia, Mexico and Peru), changes in laws providing titles for common lands, establishment or strengthening of government agencies responsible for policies and programmes concerning Indigenous and Tribal Peoples, and promoting policies and technical assistance programmes by international agencies (ILO, 2007).

Convention 169 is complemented by the Discrimination (Employment and Occupation) Convention 1958 (No. 111) with regard to the provision of equal opportunity and fair treatment for indigenous workers, whether they are engaged in wage employment or work in the informal economy including subsistence agriculture and rural community-based industries. As the latter Convention is one of the eight fundamental ILO Conventions and has been ratified by 165 States, it provides an important entry point in many countries through which to address indigenous issues (ILO, 2007).

The Vienna Declaration and Programme of Action adopted by the 1993 World Conference on Human Rights dedicates paragraph 20 to the situation of Indigenous Peoples, reaffirming the “commitment of the international community to their economic, social and cultural well-being and their enjoyment of the fruits of sustainable development”. Furthermore, “States should, in accordance with international law, take concerted positive steps to ensure respect for all human rights and fundamental freedoms of indigenous people, on the basis of equality and non-discrimination, and recognize the value and diversity of their distinct identities, cultures and social organization”.

In the 1996 World Food Summit (WFS) Plan of Action, governments made a commitment to “recognize and support indigenous people and their communities in their pursuit of economic and social development, with full respect for their identity, traditions, forms of social organization and cultural values” (Commitment 1, Objective 1.1 (d)). There are several references to Indigenous Peoples, for example, the “production and use of culturally appropriate, traditional and underutilized food crops” (Commitment 2, Objective 2.3 (c)), sustainable management of fish, forests and wildlife which are principal sources of protein for Indigenous Peoples, traditional knowledge (Commitment 3, paragraph 26), and participation in the identification of agricultural research needs (Commitment 3, Objective 3.4 (d)).

Particular note should be made of the establishment of the UN Permanent Forum on Indigenous Issues (UNPFII) in 2000. As an advisory body to the UN Economic and Social Council (ECOSOC), the Forum has a mandate to foster discussions on indigenous issues related to economic and social development, culture, the environment, education, health and human rights. It thus provides a global platform for Indigenous Peoples to dialogue with governments and international organizations.

The UN Declaration on the Rights of Indigenous Peoples, which was approved by the UN General Assembly on 13 September 2007 after 25 years of debate, represents a significant landmark in reaffirming the promotion and protection of the basic individual and collective rights and fundamental freedoms of Indigenous Peoples. Although it is not binding in international law, it is very important as an aspirational Declaration with considerable political and moral force and

is expected to influence the development of national constitutions, legislation, policies and programmes to take account of its provisions. It did not create any new rights but reaffirmed rights set out in existing international law and UN declarations which had not been implemented adequately for Indigenous Peoples. Adopted by a vote of 144 in favour, 4 against (Australia, Canada, New Zealand and the United States) and 11 abstentions, the Declaration calls for the maintenance and strengthening of Indigenous Peoples' cultural identities, their right to self-determination (within the territorial and political integrity of the State) and contains provisions, *inter alia*, regarding rights to ownership, possession or use of indigenous lands, territories and resources, protection of cultural and intellectual property, free, prior and informed consent, maintenance of traditional economic and social structures and self-government.¹¹

2.2 The Right to Food and Indigenous Peoples¹²

The right to food is a human right laid down in the Universal Declaration of Human Rights and several international conventions and covenants. The most important legal basis for the right to food is found in Article 11 of the 1966 International Covenant on Economic, Social and Cultural Rights (ICESCR)¹³ which encompasses two elements of the right to food: the right to adequate food and the right to be free from hunger. The latter is explicitly qualified as a "fundamental" right and implies immediate obligations on the part of the state.

Box 2 Article 11 International Covenant on Economic, Social and Cultural Rights

1. The States Parties to the present Covenant recognize the right of everyone to an adequate standard of living for himself and his family, including adequate food, clothing and housing, and to the continuous improvement of living conditions. The States Parties will take appropriate steps to ensure the realization of this right, recognizing to this effect the essential importance of international co-operation based on free consent.

2. The States Parties to the present Covenant, recognizing the fundamental right of everyone to be free from hunger, shall take, individually and through international co-operation, the measures, including specific programmes, which are needed:

(a) To improve methods of production, conservation and distribution of food by making full use of technical and scientific knowledge, by disseminating knowledge of the principles of nutrition and by developing or reforming agrarian systems in such a way as to achieve the most efficient development and utilization of natural resources;

(b) Taking into account the problems of both food-importing and food-exporting countries, to ensure an equitable distribution of world food supplies in relation to need.

The core content of the right to food consists of the following elements: "the availability of food in a quantity and quality sufficient to satisfy the dietary needs of individuals, free from adverse

¹¹ The countries that voted against the Declaration were basically of the view that it was incompatible with their national laws. The provisions of particular concern were those on: self-determination, recognition of indigenous rights to lands without regard to other legal rights existing in land, third party rights and expansion of the right to free, prior and informed consent.

¹² Parts of this section draw on *Indigenous Peoples' Right to Food*, by Knuth, L. (FAO, 2007a).

¹³ International Covenant on Economic, Social and Cultural Rights, Dec. 16, 1966, Art. 1, U.N.T.S. 3.

substances, and acceptable within a given culture; the accessibility of such foods in ways that are sustainable and that do not interfere with the enjoyment of other human rights.”¹⁴

Culturally appropriate foods and the activities to obtain them, such as cultivation, animal husbandry, hunting, gathering and fishing, form an important part of Indigenous Peoples’ cultural identity. The cultural acceptability of food is also a core element of the right to food, and is of particular relevance to Indigenous Peoples. The respect and protection of Indigenous Peoples’ traditional lands, territories, resources and subsistence activities by the state are fundamentally important for the realization of Indigenous Peoples’ right to food, as they form the basis of their existence and cultural identity. Thus taking steps to secure access to such resources is a vital element in the realization of the right to food.

At the 2006 World Food Summit, Heads of State and Government reaffirmed “the right of everyone to have access to safe and nutritious food, consistent with the right to adequate food and the fundamental right of everyone to be free from hunger”. The World Food Summit: five years later, reaffirmed the importance of strengthening the respect of all human rights and fundamental freedoms and invited the FAO Council to establish an Intergovernmental Working Group to develop a set of *Voluntary Guidelines to support the progressive realization of the right to adequate food in the context of national food security* (Right to Food Guidelines). The work was also undertaken in collaboration with the Office of the High Commissioner for Human Rights and the Special Rapporteur on the Right to Food. The Right to Food Guidelines were subsequently adopted by the 127th Session of the FAO Council in November 2004.

The Right to Food Guidelines, which elaborate the general human rights obligations into specific and practical recommendations, refer to “indigenous people” or “indigenous communities” explicitly in the context of access to resources and assets in guidelines 8.1, 8.10 and 8.12. Indigenous Peoples are referred to implicitly as members of vulnerable groups in several other guidelines (3.3, 7.2, 8.2, 8.3, 12.3, 13, 14.4, 15.1, 17.2 and 17.5). The guidelines referring to vulnerable groups generally point out that states should pay particular attention to their needs or focus their programmes or other activities on them. Guideline 13.2 is particularly relevant to Indigenous Peoples because of its call for a disaggregated analysis of the food insecurity, vulnerability and nutritional status of different groups (including Indigenous Peoples).

Some key implications of the right to food that are relevant to Indigenous Peoples’ food and agro-ecological systems, and the development of relevant cultural indicators are:

- Under the right to food the state is required to collect data disaggregated by ethnicity, race and indigenous status on issues relevant to the realization of the right to food. The development of cultural indicators ensures the focus on Indigenous Peoples as a marginalized and vulnerable group that needs particular attention.
- The obligation¹⁵ to respect calls for non-interference of states with existing access to adequate food. If Indigenous Peoples do not have any registered land rights, they may not be able to claim the respect of their lands, simply because their ownership of the land or land titles have not been officially recognized. From this it follows that the State should take steps to recognize and register existing traditional land rights of

¹⁴ See General Comment 12, The right to adequate food (Art.11), 12/05/99. E/C.12/1999/5. (General Comments), para. 8.

¹⁵ Under the right to food as under any other human right the State has obligations that are divided into the three dimensions - to respect, protect and fulfill.

Indigenous Peoples.¹⁶ For Indigenous Peoples whose culture is closely linked to the use of their land, the protection of that land is an important obligation of the state in order to ensure the realization of the right to food.

- Better legal protection for Indigenous Peoples' customary subsistence activities in the face of increasing competition for access to fish and game, intensifying exploitation of non-renewable resources, growing environmental pollution and continuing animal rights activism is a challenge states need to face in order to realize the enjoyment of the right to food. The (legislative) duty of the state requires the state to adopt and enforce laws that provide for preferential treatment of Indigenous Peoples' communities in this arena (affirmative action).

Various countries, in particular Latin American countries, are implanting right to food through national food and nutrition security legislation. However, national implementation faces obstacles set by the international economic system. Impediments to effective realization of the right to food were identified by the Commission on Human Rights Special Rapporteur on the Right to Food, Mr. Ziegler, who identified seven major economic obstacles that hinder or prevent the realization of these rights.¹⁷

For Indigenous Peoples, the denial of this right to food undermines their identity and survival. This was poignantly expressed in the Declaration of Atitlán, adopted at the 1st Indigenous Peoples' Global Consultation on the Right to Food (Sololá, Guatemala, 17-19 April 2002), which emphasized "...that the denial of the Right to Food for Indigenous Peoples not only denies us our physical survival, but also denies us our social organization, our cultures, traditions, languages, spirituality, sovereignty, and total identity; it is a denial of our collective indigenous existence".

Indigenous Peoples emphasize that the right to food is a fundamental aspect of human rights, fundamental freedoms and well-being. They also attach great importance to the concept of "food sovereignty", which is defined by the Declaration of Atitlán as:

"the right of Peoples to define their own policies and strategies for the sustainable production, distribution, and consumption of food, with respect for their own cultures and their own systems of managing natural resources and rural areas, and is considered to be a precondition for Food Security" (IITC, 2002).

Since the right to food is a human right, laid down in several international human rights treaties, in the case of its violation, remedies can be claimed. Food sovereignty, on the other hand, is a political concept and there is no existing international human right corresponding to the 'right to food sovereignty'. This means that from a human rights perspective governments have no legal obligations, nationally or internationally, under a claim to food sovereignty. While the demands of the food sovereignty movement are more narrowly focused on requesting governments and

¹⁶ See Eide, A., Krause, C. and Rosas, A., eds. 1995. p. 37. Eide draws this conclusion concerning the obligation of the State to ensure an adequate standard of living.

¹⁷ These include problems linked to developments in world trade particularly the agricultural policies of developed countries which perpetuate malnutrition and hunger in the South; external debt servicing and its impact on food security, including the structural adjustment programmes of the International Monetary Fund (IMF), which consistently aggravate undernourishment and malnutrition in debtor countries; developments in biotechnology, including genetically modified plants, ownership of international patents by agribusiness from the North, and worldwide protection of these patents, hampering access to food and the availability of food; access to land and credit; and discrimination against women and its impact on the realization of the right to food.

intergovernmental organizations to support local and national production and citizens' freedom to define food and agricultural policies, the right to food is often seen as neutral with regard to liberal trade policies.¹⁸ However, economic and trade policies affecting the right to food have to comply with the human rights-based approach. This approach requires the application of the human rights principles of participation, accountability, non-discrimination, transparency, human dignity and the rule of law (PANTHER). The application of these principles involves identifying rights holders and their entitlements as well as the corresponding duty bearers and their obligations. Thus, the public, including indigenous groups, have a real opportunity to shape, through democratic processes, the strategies, policies and programmes promoting the realization of the right to food. Therefore, food sovereignty and the right to food should not be viewed as competing concepts but rather as complementary.

¹⁸ The right to food, however, “does not prescribe specific economic policies and is flexible about the method countries use to achieve food security. It focuses on accountability and participation of the individual in the political process and redress mechanisms” (FAO, 2007b).

Chapter 3

Development indicators and their relevance to Indigenous Peoples

Specific indicators based on Indigenous Peoples' understanding of well-being are being developed by both UN and non-UN agencies in addition to a number of Indigenous Peoples' organizations. A summary¹⁹ of the current work in the field of cultural indicators is provided below. A list of these indicators is presented in Appendix table 1.

3.1 The use of cultural indicators by the UN System and other international organizations

There are some promising, though limited, experiences with cultural indicators by UN and other international organizations, as highlighted below:

- i) **Permanent Forum on Indigenous Issues (UNPFII)** – The UNPFII is undertaking some work on indicators of Indigenous Peoples' well-being. The Fifth session of the UNPFII, 2006, discussed a report on the Meeting on Indigenous Peoples and indicators of well-being (Ottawa, 22-23 March 2006) which focused on Indigenous Peoples in developed countries. Of particular interest and also relevant to developing countries, was the proposal that “Statistical departments of states should consider evolving their role from a collector of information to one of facilitator and supporter for indigenous peoples' collection of their own information. It was further stressed that indigenous peoples must generate their own data, since data driven centrally by state policy development consistently raise issues of trust among the indigenous population”. Indicators relevant to tenure systems proposed by the UNPFII 5 include traditional land tenure of indigenous and local communities, movements of indigenous and local communities away from traditional territories, and impacts of policies and programmes for traditional knowledge retention, language diversity and rights to land and other resources.
- ii) **Advisory Group to Article 8(j) and related provisions of the Convention on Biodiversity (CBD)**²⁰ - The CBD's Akwé: Kon Voluntary Guidelines (CBD, 2004) centre on impact assessment procedures and methodologies. The proposed indicators could provide *ex-ante* information on the likely cultural, environmental and social impacts of proposed development projects and contribute to preventing their potential adverse impacts on the livelihoods of the indigenous and local communities concerned (CBD 2004). Through the impact assessment process, cultural issues to be considered are “cultural heritage, religions, beliefs and sacred teachings, customary practices, forms of social organization, systems of natural resource use including land use patterns, places of

¹⁹ A concise overview of data collection systems and indicators related to Indigenous Peoples currently used in the United Nations system is provided by the Inter-Agency Support Group in their paper presented to the Fifth Session of UNPFII in May 2006 (Inter-agency Support Group, 2006).

²⁰ On the occasion of the 4th meeting of the CBD's Working Group on Article 8j and Related Provisions (WG8j) in Granada, Spain, 23-27 January 2006, Indigenous Peoples' organizations formed the Indigenous International Forum on Biodiversity Working Group on Indicators to respond to the immediate need to identify and test indicators relevant to the implementation of the Strategic Plan for the Convention on Biological Diversity (IIFB, 2006a).

cultural significance, economic valuation of cultural resources, sacred sites, ceremonies, languages, customary law systems, and political structures, roles and customs. The CBD Secretariat (CBD, 2004) states that the possible impacts on all elements of culture, including sacred sites, should be taken into consideration while developing cultural impact assessments.

- iii) **United Nations University (UNU)** - An initiative by the United Nations University addresses the use of traditional knowledge in intergovernmental processes related to environmental conservation, sustainable development, human rights, international trade, and intellectual property. This includes consideration of the drivers of cultural diversity loss, options for the retention of traditional knowledge, languages and cultural communities, and scenarios for the impacts of state building and globalization on local communities (United Nations University, 2005).
- iv) **UN Research Institute for Social Development (UNRISD)** - UNRISD's project on "Culture and Development" (1996-97) included conceptual and methodological work on cultural indicators of development. One of the outcomes was a proposal to combine three indices to produce a composite Cultural Index of Development, which are: i) Cultural Freedom Index, which could indicate whether a society respects and allows basic human freedoms of belief, thought and expression; ii) a Creative Empowerment Index, which could indicate whether a society encourages people to express themselves in innovative ways; and iii) a Cultural Dialogue Index, which could register the basic opportunities and means for mutually beneficial communication among people of different cultures (McKinley, 1997). These could be adapted to indigenous situations. For example, the first two indices could be adapted to measure the extent of use of cultural practices in traditional food systems. Similarly, the cultural dialogue index could be used for measuring the extent to which Indigenous Peoples' convictions about these food systems are effectively communicated to and understood and respected by the dominant culture.
- v) **United Nations Education, Scientific and Cultural Organization (UNESCO)** - UNESCO used several indicators in its World 2000 report on Cultural Diversity, Conflict and Pluralism (UNESCO, 2000). Indicators of possible relevance as cultural indicators for Indigenous Peoples are: leading languages, national festivals, folk and religious festivals, progress in attaining the provisions of the UNESCO Convention for the Safeguarding of the Intangible Heritage (2003) and the Convention on the Protection and Promotion of the Diversity of Cultural Expressions (2005).
- vi) **The Inter-American Development Bank (IADB)** has provided data on quality of life indicators, disaggregated by gender and, for some indicators, by ethnicity (generally indigenous vs. non-indigenous) for 22 countries in Latin America and the Caribbean. These are available on their comprehensive website (<http://www.iadb.org/sds/xindicators>). One indicator which has potential relevance as a cultural indicator for Indigenous Peoples is the "proportion of population with access to secure tenure (%)". However, the only available data for this indicator are for urban, rather than rural populations. For example, in 2002 in Bolivia security of tenure for the non-indigenous urban population was higher at 37.9 percent compared with 29.9 percent for the indigenous population. Similarly, in 2003, in Colombia security of tenure was 83.8 percent for non-indigenous and 67.8 percent for indigenous populations while in Ecuador it was 62 percent and 48.5 percent respectively.²¹

²¹ The IADB programme Social Indicators and Equity Information System for Latin America and the Caribbean provides statistical information for 22 countries since 1990, with more than 80 household

3.2 UN system experience with other related indicators

Other development indicators used in assessments of well-being, poverty and progress towards meeting the Millennium Development Goals (MDGs) could be useful for assessing Indigenous Peoples' socio-economic and cultural situations including their food security and their agro-ecosystems if they are disaggregated by indigenous/non-indigenous populations. Some examples are:

- (i) **The Human Development Index (HDI)**, initiated in 1990 by the United Nations Development Program (UNDP), is a composite index, where indicators focus mainly on material achievements of creative activity and expression (the arts and participation in these cultural events). They do not measure the creative achievements of those people that are not in the market or formal institutions, resulting in a 'wealth bias'. One indicator of possible use for indigenous rights to food and food security is "Status of major international human rights instruments" (number 30 in the HR Index), which indicates what legal or policy frameworks are in use for the protection of human rights.

The UNDP office in Nicaragua developed a highly relevant list of cultural indicators for food security. These are in similar categories to the indicator areas developed through the IITC process, and are shown in Appendix table 4. This list of indicators provides a practical application of cultural indicators for a specific country and is a test case for the wider application of these indicators.

- (ii) **Millennium Development Goals (MDGs):** The United Nations Millennium Declaration states that no effort will be spared to achieve respect for all internationally recognized human rights. This implies that respect for the rights of Indigenous Peoples should be fundamental to achieving the MDGs (UNPFII 5, 2006). Despite these aspirations, the MDGs are often considered to be a part of the "meta-narrative" of development orthodoxy, which emphasizes "an overarching framework linking macro-economic policy, harmonized aid and effective public expenditure management in support of good governance policies" (Simon Maxwell of the UK-based Overseas Development Institute (ODI), cited by Nyamugasira, 2005). Indeed, indicators used to monitor the achievement of the MDGs could be adapted to be more inclusive of cultural indicators. For example, to eradicate extreme poverty and hunger (MDG 1) in indigenous communities, it would be vital to deepen the understanding of what poverty means in these communities, beyond the conventional definition of poverty as low income. Poverty can mean the lack of access to their traditional lands, territories and foods, and lack of freedom of cultural, religious and spiritual expression. The concept of basic needs should also be understood in terms of traditional subsistence economies and not only in terms of market mechanisms (Tauli-Corpuz, 2005).

- (iii) **Poverty Reduction Strategy Papers (PRSPs):** Prepared at the request of the international finance institutions (World Bank and International Monetary Fund) as part of the debt relief initiative and supported by a number of bilateral donors, UN organs and bodies, and many UN specialized agencies, Poverty Reduction Strategy Papers (PRSPs)²² define national strategies for growth, with special emphasis on poverty alleviation. However, the PRSP

²² PRSPs describe a country's macroeconomic, structural, and social policies, and are designed in collaboration with civil society. As of early 2001, 31 countries had produced PRSPs, with the support of the IMF, World Bank, regional development banks, and donors (IMF Factsheet, 2001).

methodology has been found to be ineffective for Indigenous Peoples in some countries. After reviewing PRSPs in ten African countries, the African Forum and Network on Debt and Development (AFRODAD) reported that processes were so rushed that the extent and quality of civil society participation was undermined. They recommend that local level capacities and institutional mechanisms be strengthened for improved stakeholder participation in the PRSP process (Kapijimpanga, 2005). Tchoumba (2005) reports that some of the indicators used in PRSPs in Cameroon fell short of identifying Indigenous Peoples' needs and realities. The Canadian Council for International Co-operation noted the concern of many civil society organizations regarding the priority given to PRSPs by the World Bank and the IMF and their limiting effects on policy choices available to developing countries (Commonwealth Foundation, 2005). Box 3 provides an analysis of the PRSP report for Cameroon.

Box 3 Poverty indicators in PRSPs: the case of Cameroon

A study undertaken in Cameroon (Tchoumba 2005) within the context of an ILO 'ethnic audit' of Poverty Reduction Strategy Papers (PRSPs) in 14 countries, assessed the degree to which the cultural specificities of Indigenous and Tribal Peoples in Cameroon have been taken into account in national poverty reduction efforts. The study was conducted in line with the fundamental principles of ILO's Indigenous and Tribal Peoples Convention, 1989 (No. 169). According to the Pygmy and Mbororo Indigenous and Tribal Peoples participating in the study, a poverty alleviation strategy should recognize and respect: i) customary land rights; ii) access to citizenship and justice; iii) organizational capacity-building to ensure effective representation in decision-making processes; iv) effective participation in the management of forest resources; v) equitable sharing of the benefits from forest exploitation and the conservation of biodiversity; vi) improvement of agriculture; and vii) culturally appropriate access to basic social infrastructure and services. These study participants also emphasized that poverty has a socio-cultural dimension which translates into an incapacity to assume one's cultural choices, and that appropriate indicators are essential to capture these cultural dimensions.

3.3 Some national experiences in using cultural indicators

Several national statistical offices and Indigenous Peoples' organizations also measure aspects of Indigenous Peoples' well-being, mainly using conventional indicators (health, education, income, etc.) disaggregated by indigenous/non-indigenous, but also using some cultural indicators.

- i) **Australia:** The East Kimberley Impact Assessment Project (EKIAP) used innovative approaches to analyze the impact of mining, tourism and other developments on the East Kimberley region of Western Australia. Storytelling, for example, was used by Aboriginal participants to highlight their issues and perspectives (Coombs *et al.*, 1989, Ross, 1989, cited by O'Faircheallaigh, 1999). However, despite efforts to take account of local perspectives, there were problems in the social impact assessment process itself, including the extent to which the process could impact on development outcomes. Similarly, Craig and Tester (1992) stress that more attention to institutional analysis is required in social impact assessments in native communities in Canada, since the institutional arrangements within which decisions are made also need changing in order to affect a change in outcome.
- ii) **Canada:** The Registered Indian Human Development Index (IHDI), a comparative index developed by Indian and Northern Affairs Canada (INAC) and based on the UNDP HDI, compares the well-being of indigenous and non-indigenous Canadians. Complementing this is the First Nations Community Well-Being Index (CWB) which measures the well-being of individual First Nations communities. While these indexes do not include specific indicators related to the right to food and food security, there are several cultural indicators. The

Assembly of First Nations (AFN) 'Closing the Gap Reporting Framework' lists indicators that measure progress towards achieving a 10-year goal of eliminating poverty and other significant disparities among First Nations and other Canadians. These indicators of well-being also draw on the HDI and other indicators to enable alignment with a broader set of determinants of well-being (Assembly of First Nations, 2006).

iii) New Zealand: The New Zealand Government's "Maori Statistics Unit" covers virtually all facets of Maori life, yet the availability of these data appear to have little influence on developing policy that reduces socio-economic disparities (A. Mead, personal communication 2006). The Traditional Knowledge Conference for Indigenous Indicators of Well-being (June 2006, New Zealand) (<http://www.traditionalknowledge.co.nz/>) identified practices, models and perspectives for protecting, sustaining and nurturing traditional systems of knowledge and addressed the questions:

- How do we know that our knowledge, ways of knowing and associated practices are in a state of well-being?
- What practices do we use to sustain and help the next generation look after our systems of knowledge?
- How do we know that our relationships, languages, literatures, stories, environments, healing practices, spiritualities, genealogies, bodies, children, elders, women, men, and communities are flourishing?
- What are the basic indicators that we use to give us confidence that all is well?
- How do we measure our development and advancement?

Clearly, progress is being made in the collective efforts to generate effective, credible and representative data on Indigenous Peoples' situations including the use of cultural indicators identified by themselves. However, much more work needs to be done. There is considerable scope for refining existing indicators such as the PRSP and common country assessment indicators, the MDG indicators, and the human development indices to take account of cultural considerations. There is also a need to ensure disaggregation by indigenous and non-indigenous populations when using these existing indicators. These efforts also provide a useful structure within which to place additional cultural indicators that measure the status of Indigenous Peoples' traditional food and agro-ecological systems.

Chapter 4

Conceptual Framework

A modified version of the Sustainable Livelihoods (SL) framework²³ is presented in this chapter (see Figure 2) as a tool for understanding relationships between culture²⁴ and food and agro-ecological systems. It also assists in understanding the ways in which these interact with the outside environment – both the natural environment and the policy and institutional context – to influence livelihood, food security and well-being outcomes. Its application to the development of cultural indicators to measure these outcomes for Indigenous Peoples is also explored.

The **Vulnerability Context** refers to events and trends that undermine livelihoods and well-being. These can be unpredictable and sudden (such as earthquakes, forest fires and mud slides) or slower acting (such as soil erosion, contamination of water sources by mining or oil drilling enterprises, climate change impacts or loss of cultural integrity and identity as Indigenous Peoples assimilate into a dominant culture). Some shocks and stresses can originate outside the community, affecting everyone in the locality, while others such as illness or a death in the family may only affect some individual households. The degree of vulnerability or resilience to change induced by trends, shocks and seasonality are also influenced by the amount and relative importance of each type of capital in the asset pentagon. The original SL framework also considers the effect, if any, that culture has on the way people manage their assets and the livelihood choices they make (Carney, 1998). Cultural coherence and unity can play a key role in providing a strong response on the part of an entire Indigenous People or a particular indigenous community in ensuring better preparation for an emergency situation or a rapid response to an actual crisis.

In the original SL framework, culture is also included in the **Policies, Institutions and Processes**²⁵ box,²⁶ which refers to the institutions, organizations, policies and legislation that shape livelihoods. These determine access to the different types of capital, to livelihood strategies and to decision-making bodies and sources of influence. They also provide the context – or governance structure – within which organizations operate. Processes include institutions, legislation, *culture* and power relations. The organizations that have developed and applied SL analyses have generally not given particular emphasis to culture. Examples of culture that this paper proposes for consideration include (i) cultural norms, beliefs and values, (ii) socio-cultural institutions such as kinship, marriage, inheritance, religion, draught oxen sharing (FAO, 2005)

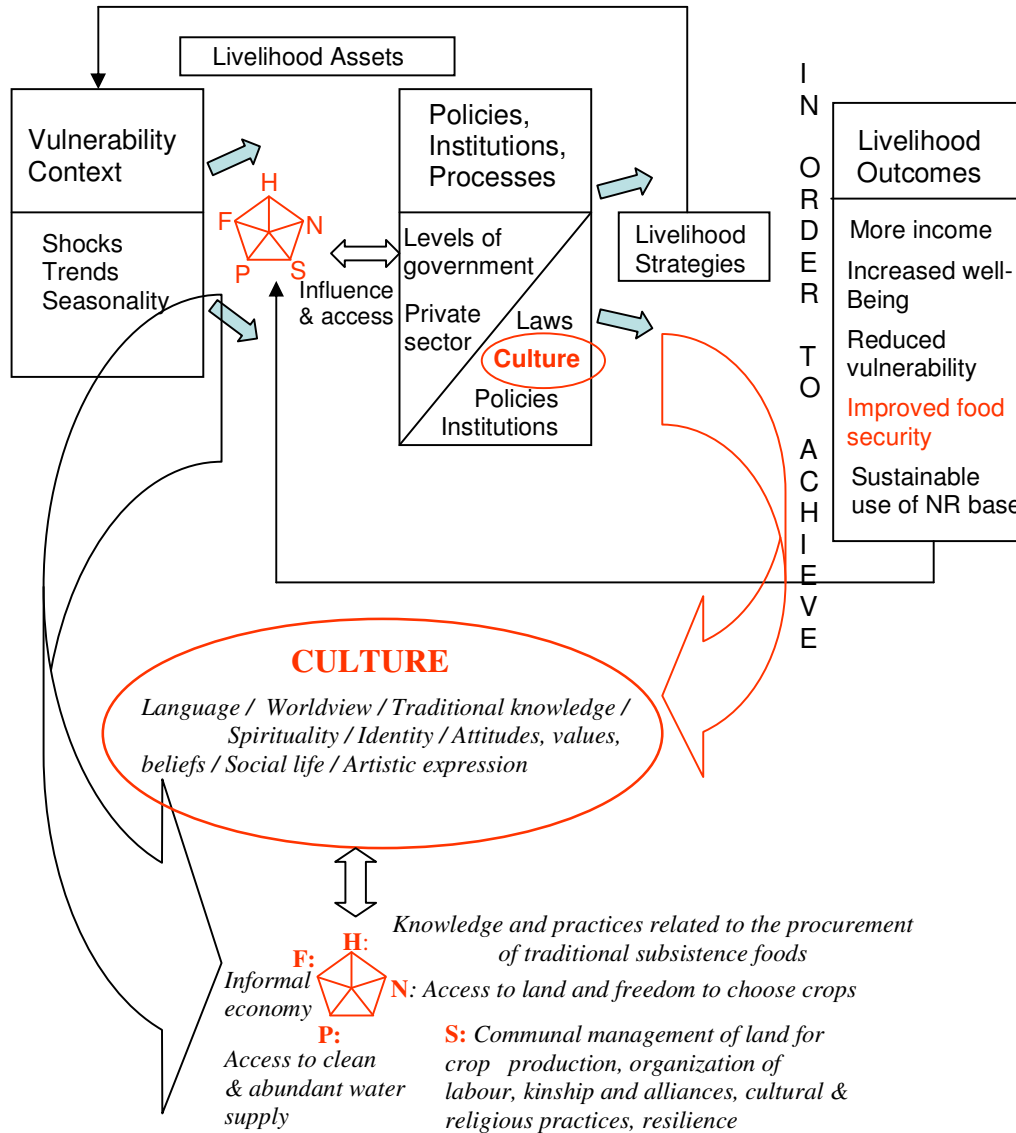
²³ Sustainable livelihoods approaches were developed in the 1990s by a number of organizations including the UK Department for International Development (DFID), research institutes (e.g. the Institute of Development Studies, Sussex), NGOs (e.g. CARE and Oxfam) and UN programmes and agencies (e.g. UNDP). It has subsequently been used and adapted by various development agencies around the world. DFID undertook an intensive programme to refine the concepts and approaches and to operationalize them at the country-level (Ashley and Carney, 1999). From 2000 onwards DFID also provided support for a number of years to various UN agencies, including FAO and IFAD, to develop and apply these approaches. This chapter also draws on A. Carloni (FAO, 2005).

²⁴ Culture refers to “shared beliefs, values, traditions, customs, language, knowledge and ceremonies that people transmit across generations and use to define their collective relationships with each other and the world” (FAO, 2007c).

²⁵ Also referred to as ‘Transforming structures and processes’.

²⁶ The CARE livelihood framework clusters economic, culture and political influences in the “context” (Ashley and Carney, 1999).

Figure 2 Sustainable livelihoods framework illustrating how culture cross-cuts all five livelihood assets



Key:

H = Human capital **N** = Natural capital **F** = Financial capital **S** = Social capital **P** = Physical capital **NR** = Natural resource

The top portion of Figure 2 shows the SL framework as developed by the UK Department for International Development (DFID, 2000). Examples of relationships between culture and the five assets which influence and are influenced by the other elements in the framework are shown in the lower part of the diagram.

The **Vulnerability Context** refers to events and trends that undermine livelihoods and well-being. These can be unpredictable and sudden (such as earthquakes, forest fires and mud slides) or slower acting (such as soil erosion, contamination of water sources by mining or oil drilling enterprises, climate change impacts or loss of cultural integrity and identity as Indigenous Peoples assimilate into a dominant culture). Some shocks and stresses can originate outside the community, affecting everyone in the locality, while others such as illness or a death in the family may only affect some individual households. The degree of vulnerability or resilience to change induced by trends, shocks and seasonality are also influenced by the amount and relative importance of each type of capital in the asset pentagon. The original SL framework also considers the effect, if any, that culture has on the way people manage their assets and the livelihood choices they make (Carney, 1998). Cultural coherence and unity can play a key role in providing a strong response on the part of an entire Indigenous People or a particular indigenous community in ensuring better preparation for an emergency situation or a rapid response to an actual crisis.

In the original SL framework, culture is also included in the **Policies, Institutions and Processes**²⁷ box,²⁸ which refers to the institutions, organizations, policies and legislation that shape livelihoods. These determine access to the different types of capital, to livelihood strategies and to decision-making bodies and sources of influence. They also provide the context – or governance structure – within which organizations operate. Processes include institutions, legislation, *culture* and power relations. The organizations that have developed and applied SL analyses have generally not given particular emphasis to culture. Examples of culture that this paper proposes for consideration include (i) cultural norms, beliefs and values, (ii) socio-cultural institutions such as kinship, marriage, inheritance, religion, draught oxen sharing (FAO, 2005) and reciprocal labour, and (iii) cultural practices such as oral history, songs, myths, dances, religious and spiritual ceremonies. By expanding in this way the concept of culture that is used in the SL framework, the relationships between culture and all five assets and their influence on subsequent livelihood outcomes are made more prominent. The framework can also serve to enrich understanding of the specific relationship of culture to food security as a livelihood outcome. Thus culture is also central to the policies, institutions and processes box.

Furthermore, there are important two-way relationships between culture and the assets pentagon that influence livelihood strategies and livelihood outcomes. These relationships are explored below. Although the indicator areas identified during the 2nd Global Consultation on the Right to Food and Food Security for Indigenous Peoples (Nicaragua, 2006), that are the focus of this paper, will be dealt with in more depth in Chapter 5, some suggestions are given below as to how they relate to the five livelihood assets. Some illustrative examples of their relevance to Indigenous Peoples are also given.

Natural capital refers to land and other natural resources on which Indigenous Peoples depend for food production, hunting and gathering or fishing and the biodiversity used directly for production. Culture is an integrating factor: Indigenous Peoples' relationships with their traditional lands and territories form a core part of their cultural identity and spirituality and are deeply rooted in their culture, language and history. Their rights to their lands, territories and natural resources are considered to be part of the definition of their identity. As custodians of the land, Indigenous Peoples are also stewards of the environment, seeking to nurture biodiversity, ensure sustainable environmental management and protect their sacred sites. This aspect of

²⁷ Also referred to as 'Transforming structures and processes'.

²⁸ The CARE livelihood framework clusters economic, culture and political influences in the "context" (Ashley and Carney, 1999).

natural capital is often overlooked in the prevailing development paradigm in which land and other forms of natural capital (forests, fish stocks, water, oil and minerals) are largely regarded as commodities and are considered sources of financial capital, to be exploited, bought or sold for financial gain. Thus land has a much broader meaning for those with spiritual, ancestral and linguistic ties to the land.²⁹ For many Indigenous Peoples secure access to land means more control over their lives and their identity as Indigenous Peoples. The natural capital-culture relationship has implications for well-being, improved food security and sustainable use of the natural resource base, all key goals in the livelihood outcomes box.

The identified indicator areas that are most closely related to natural capital are:³⁰

1. *Access to, security for and integrity of lands, territories, natural resources, sacred sites and ceremonial areas used for traditional food production, harvesting and/or gathering and related cultural and ceremonial purposes.* This indicator area emphasizes the integrity of lands, territories and natural resources.
2. *Abundance, scarcity and/or threats to traditional seeds, plant foods and medicines, and food animals, as well as cultural practices associated with their protection and survival.* This indicator area focuses on threats to local biodiversity and the availability of diverse gene stocks to ensure sustainable harvests. This indicator area also relates closely to the ‘vulnerability’ context, which frames the external environment in which people exist and over which people have little control, such as population movements and changes, national and international economic trends and shocks, trends in governance, land conversion and loss of habitat, conflict, human health shocks, climate change and seasonality of production.

Human capital refers to education, knowledge and skills and active labour. It is influenced by the cultural norms and values that shape the goals and approaches used in education and health services and programmes, in addition to the content, stewardship and inter-generational transmission of *traditional* knowledge and skills. Knowledge derived from a close historical relationship to the land is culturally based. Traditional education through which this knowledge is acquired is largely experiential and places the learner directly in contact with the environment. The human capital of traditional or local knowledge gained by daily interaction with this environment includes the varied aspects of land and resource preservation and management, knowledge of medicinal plants, protection of biodiversity, custody of sacred sites and knowledge of religious ceremonies. Human capital also includes the knowledge of languages and the knowledge maintained through language, including through stories, oral histories, songs and myths. All of these aspects, which for Indigenous Peoples are associated with daily use of their agro-ecosystems, have been refined and adapted over the years in culturally significant ways, and thus have a critical bearing on their livelihood outcomes.

Indicator areas that best describe human capital are areas:

²⁹ Other conceptual frameworks incorporate culture and rights as integral to human-environment relationships. For example, the Millennium Ecosystem Assessment (MA) draws on a conceptual framework that incorporates secure resource access and freedom of choice and action as constituents of well-being. This framework was adapted by the Quechua in Peru to reflect their world view which emphasizes the importance of the cultural element of reciprocity in human-environment relations.

³⁰ The indicator areas used in this section correspond to the *consolidated* list of five indicator areas agreed at the 2nd Global Consultation on the Right to Food and Food Security for Indigenous Peoples (Bilwi, Puerto Cabeza, Nicaragua, 2006). For the list of these five indicator areas and their relationships to the longer list of 11 indicator areas, refer to Table 1.

2. *Abundance, scarcity and/or threats to traditional seeds, plant foods and medicines, and food animals, as well as cultural practices associated with their protection and survival.* The availability of or threats to these resources and cultural practices have a bearing on Indigenous Peoples' existing knowledge and skills related to their food and agro-ecological systems and opportunities for adaptation
3. *Use and transmission of methods, knowledge, language, ceremonies, dances, prayers, oral histories, stories and songs related to traditional foods and subsistence practices, and the continued use of traditional foods in daily diet as well as in relevant cultural/ceremonial practices.* Local knowledge of biodiversity in local agro-ecosystems is an essential "asset" to ensure sustainable management of resources.

Social capital refers to kin networks, group membership in formal or informal organizations, socio-political voice and influence. Culture is often considered one aspect of social capital. The networks and institutions that people rely on to attain their livelihood objectives form the link between social capital and culture. Culture provides the values and principles that underlie, within these networks and institutions, adherence to mutually-agreed upon or commonly accepted rules, norms and sanctions, relationships of trust, reciprocity and exchanges that facilitate co-operation (DFID, 2000). The equitable and sustainable management of common property resources found in many indigenous agricultural, pastoralist and fishing communities is a form of social capital that provides a basis for sustainable livelihoods and shared cultural identity. Sadly, the social capital inherent in customary land tenure systems can be destroyed by land privatization schemes that operate by other values and rules.

The indicator areas related to social capital are indicator areas:

1. *Access to, security for and integrity of lands, territories, natural resources, sacred sites and ceremonial areas used for traditional food production, harvesting and/or gathering and related cultural and ceremonial purposes.* Indicator area 1 addresses norms and sanctions regulating land use and the social institutions (such as religious ceremonies) that represent the complex cultural relationship to land.
3. *Use and transmission of methods, knowledge, language, ceremonies, dances, prayers, oral histories, stories and songs related to traditional foods and subsistence practices, and the continued use of traditional foods in daily diet as well as in relevant cultural/ceremonial practices.* This indicator area is concerned with the transmission of knowledge and practices related to food, emphasizes the links between this knowledge and the formal and informal social institutions that are in place to conserve and transmit this knowledge to future generations.
4. *Capacity by Indigenous Peoples for adaptability, resilience, and/or restoration of traditional food use and production in response to changing conditions including migration, displacement, urbanization and environmental changes.* This indicator area attempts to capture the level of resilience that is harnessed or developed within communities to cope with socio-ecological change.
5. *Ability of Indigenous Peoples to exercise and implement their rights including self-determination and free, prior and informed consent, as well as their self-government structures, to promote and defend their Food Sovereignty and related aspects of their development.* This indicator area represents an element of social capital because respect for customary laws and local governance that fosters self-determination is critical for maintaining cultural identity and achieving food sovereignty.

Physical capital is an asset that comprises the basic infrastructure, equipment and producer goods needed to support livelihoods, including affordable transport, secure shelter and buildings, adequate water supply and sanitation, clean, affordable energy and access to information and

communications networks. It can also include the boats, livestock³¹ and work animals (donkeys, horses, dogs) that are essential to some Indigenous Peoples' livelihoods. Cultural values and practices directly influence the type of physical assets bought or produced by Indigenous Peoples. They also influence the ways they are used; for example, the infrastructure and equipment used for protecting and accessing precious water supplies for domestic, animal or agricultural use. There is also a cultural dimension to the use of energy-intensive inputs such as fertilizers and pesticides in food production.

Financial capital in the form of cash, savings or loans is less relevant to traditional subsistence-based cultures. However, financial capital may also refer to livestock, seed stocks and gold and jewellery (that can be easily sold for cash). Even in subsistence economies, Indigenous Peoples require some cash to purchase inputs or consumption goods that they cannot produce themselves, and to have the freedom to choose the ways in which they wish to ensure their food and livelihood security and well-being.

Culture thus cross cuts all five assets in the SL framework, influences the vulnerability context, and plays a critical role in mediating appropriate enabling policies, institutions and development processes to ensure livelihood outcomes that meet the cultural aspirations of Indigenous Peoples.

³¹ Livestock, which are raised by humans, can be seen as physical capital (FAO, 2005). As they are also an important source of cash from the sale or hire of animals or their products, they can also be seen as financial capital (Livestock in Development, 1998). Wildlife, which exists independently of human action, is seen as natural capital (Carney, 1998, FAO, 2005).

Chapter 5

Priority areas identified by Indigenous Peoples for indicator development

The indicator areas that are presented in this paper are the product of a process of the two Global Consultations, the IITC-administered questionnaire and the literature review that was the background to this paper. The different Appendix tables are products of different phases of this process. As mentioned in section 1.4, the eleven areas for indicator development (see Appendix tables 1 and 2) that were identified during this process were subsequently condensed at the 2nd Consultation into five main areas in order to facilitate their further refinement and data collection and analysis (Appendix table 3).³² These indicator areas represent three interconnected cultural subsystems: the food and agro-ecological system, the land/resource tenure system and the knowledge/practice/language/worldview system. A summary table listing these five areas and the corresponding indicator areas from the longer list is given below (Table 1) to provide the framework for the following discussion.

This purpose of this section is to i) provide evidence from the literature on the issues related to these priority areas; ii) list indicator areas that are being developed by other agencies; and iii) suggest additional indicators based on supporting literature. Since few data have been collected on these indicator areas, there is a need to promote the collection and analysis of data and, where appropriate, to further refine the indicators.

Table 1 Comparison of the two indicator lists developed at the 2nd Global Consultation on the Right to food and food security for Indigenous Peoples: cultural indicators for food security, food sovereignty and sustainable development

Consolidated list of cultural indicator areas (See Appendix table 3)	Longer list of cultural indicator areas (See Appendix table 2)
1. Access to, security for and integrity of lands, territories, natural resources, sacred sites and ceremonial areas used for traditional food production, harvesting and/or gathering and related cultural and ceremonial purposes	1. Access to, security for and integrity of lands, territories and natural resources for traditional food production, harvesting and/or gathering 6. Integrity of and access to sacred sites for ceremonial purposes related to use of traditional foods
2. Abundance, scarcity and/or threats to traditional seeds, plant foods and medicines, and food animals, as well as	2. Abundance, scarcity and/or threats to traditional seeds, plant foods and medicines, and food animals, as well as

³² In Appendix tables 2 and 3 the indicators are ordered by categories depending on whether they are *structure*, *process* or *response* indicators. Structure indicators are, for example, ratification of international human rights instruments and existence of mechanisms for access to the justice system. Process indicators are, for example, the existence of and access to information relating to policy instruments and programmes for the protection and progressive realization of Indigenous Peoples' economic, social, cultural, civil and political rights. Outcome indicators measure the impacts of development initiatives.

cultural practices associated with their protection and survival	cultural practices associated with their protection and survival
<p>3. Use and transmission of methods, knowledge language, ceremonies, dances, prayers, oral histories, stories and songs related to traditional foods and subsistence practices, and the continued use of traditional foods in daily diet as well as in relevant cultural/ceremonial practices</p>	<p>3. Consumption and preparation of traditional plant and animal foods and medicines, including in ceremonial/cultural use as well as daily household use</p> <p>4. Continued practice and use of ceremonies, dances, prayers, songs and stories and other cultural traditions related to the use of traditional foods and subsistence practices</p> <p>5. Preservation and continued use of language and traditional names for foods and processes (planting, hunting, gathering, harvesting, fishing, food preparation etc.)</p> <p>9. Existence and viability of mechanisms and institutions created by and accessible to Indigenous Peoples for transmission of food related traditional knowledge and practices to future generations</p>
<p>4. Capacity by Indigenous Peoples for adaptability, resilience, and/or restoration of traditional food use and production in response to changing conditions including migration, displacement, urbanization and environmental changes</p>	<p>7. Migration and movement away from traditional lands as a result of rural-to-urban migration, conflict, forced relocation, land appropriation, climate change, and economic necessity; return patterns and relationships to continued use of traditional foods</p> <p>10. Capacity within Indigenous communities and Peoples for adaptability, resilience, resistance and/or restoration of traditional food use and production in response to changing economic, political and/ or environmental conditions</p>
<p>5. Ability of Indigenous Peoples to exercise and implement their rights including self-determination and free, prior and informed consent, as well as their self-government structures, to promote and defend their Food Sovereignty and related aspects of their development</p>	<p>8. Effective consultations for planning, implementation and evaluation applying the principles of free, prior and informed consent and full participation by community members when development programs are implemented by states, outside agencies or other entities and the extent to which cultural concerns are considered and addressed</p> <p>11. Ability of Indigenous Peoples to utilize and implement recognized rights, legal norms and standards as well as self-government structures to promote and defend their Food Sovereignty on the local/tribal/community, national and international levels</p>

The rest of this chapter explores in detail the 5 indicator areas in the first column of Table 1, as well as their relationship to the more detailed set of 11 indicators and the findings of the literature review. Evidence drawn from the literature is presented in order to substantiate the importance of these indicator areas for Indigenous Peoples.

5.1 Access to, security for and integrity of lands, territories, natural resources, sacred sites and ceremonial areas used for traditional food production, harvesting and/or gathering and related cultural and ceremonial purposes

5.1.1 Access to, security for and integrity of lands, territories and natural resources for traditional food production, harvesting and/or gathering (Indicator area 1 in the set of 11 indicator areas)

The 2007 UN Declaration on the Rights of Indigenous Peoples and the 1989 ILO Convention No. 169 call on states to respect indigenous lands and territories and proclaim the right of Indigenous Peoples to control their natural resources.

The relationship between security of land tenure and cultural identity and well-being is well established. In many societies, culture and land are inextricably related (Baranyi and Weitzner, 2006) and land is regarded as the “lifeblood of the people”, providing the necessities of life and defining the cultural identity of every person (Putupen, 2001 cited by Nichols, 2002:147). In 2003, the National Chief of the Assembly of First Nations (AFN) included language and culture, land claims and environment as key determinants of First Nations’ well-being. For many people, having land rights in their natal area is part of their definition of self; the land does not belong to them, but they belong to the land (Benwell *et al.*, 1997 as cited by Riddell, 2000). Sixty-three percent of First Nations respondents to a 2002 public opinion poll identified the loss of land and culture as significant contributors to their poorer health status (NAHO, 2003).

The Commission on Human Rights proposed a framework for the analysis of contemporary problems regarding indigenous land rights and highlighted the failure to recognize, implement and enforce rights to lands, territories and resources as well as the failure to protect the integrity of the environment of indigenous lands and territories (Tebtebba Foundation, 2002). In this context, there is a need for the development of indicators and the collection of related data on Indigenous Peoples’ land rights and security of tenure. Few, if any, comprehensive studies or surveys exist. The Commission on the Legal Empowerment of the Poor is attempting to fill this gap, among its other objectives, with studies on Indigenous Peoples’ land rights. It is hoped that the recently launched Global Land Tool Network (GLTN),³³ which aims to facilitate the attainment of the MDGs through improved land management and tenure tools for poverty alleviation and the improvement of the livelihoods of the poor, will also contribute to filling this gap. However, the GLTN website indicates that the Network’s focus is primarily on urban land and no specific reference is made to Indigenous Peoples.

(a) Land titling and registration.

Central to this priority area for indicator development is security of tenure,³⁴ that is inalienable access to and control over land, water, and other natural resources. The concept of tenure security³⁵ is complex and generally involves bundles of different rights (such as rights of access,

³³ UN-HABITAT, together with the World Bank and the Swedish International Development Agency (SIDA) initiated the Network idea. It is based in UN-HABITAT, and works with a number of partner organizations.

³⁴ Measures of tenure security depend on the way the rules of tenure are legitimized, respected and implemented within a given society.

³⁵ Tenure security may also depend on the legal and regulatory environment, local and national governmental institutions (local courts, tax and conflict management institutions) and self-governance. The concept is multifaceted and is not easy to operationalize.

passage, seasonal grazing, cultivation, tree planting, gathering or use of wild products and transfer through inheritance, loan or sale) which are usually applied to specific resources, and can vary over time. In order to appreciate the diversity of tenure regimes and identify effective responses to local specificities and complexities, it is useful to distinguish between the different component tenure niches³⁶ in a community's landscape (Bruce, 2000).

The key issues concern the registration of Indigenous Peoples' traditional lands, recognition of the customary tenure rules and practices that govern their use, and the privatization of their lands (often against their wishes) through the granting of legal titles to individual owners.³⁷

The effectiveness and sustainability of collective land tenure systems are directly affected by the extent to which these systems are given legal recognition, indigenous knowledge is respected and customary law is allowed to operate (Colchester *et al.*, 2004). In these systems, access to land is generally based on culturally-defined rules of land inheritance or use rights (by lineage, gender, marriage, residence, age and other culturally-based characteristics). Common property systems provide a basis for shared identity and livelihoods and have been found to contribute to the health status of communities. For example, Indigenous Peoples in Pacific Island States include customary tenure as hallmarks of national identity in their constitutions and laws. Bromley and Cernea (1989, cited by Esmail, 1997) found that the breakdown in Indigenous Peoples' common property regimes and traditional customs and beliefs contributed to resource degradation, thus leading the authors to conclude that aspects of culture may provide a stronger conservation incentive for some types of common property regimes than market logic (see also Richards, 1997 cited by Esmail, 1997, Tucker, 2004). In some cases where indigenous common property regimes have not been recognized there is a high degree of tenure insecurity and chaotic, open access systems have resulted. In these situations, state control is often seen as the solution (Bruce, 1996). Thus, it becomes critical to understand customary laws, kinship rules and other aspects of culture that govern rights of access to land in order to formulate appropriate rural development and land registration policies.

Evidence suggests that land privatization and titling policies and programmes often have negative impacts on Indigenous Peoples' tenure security and well-being, as a series of recent studies of land titling and registration in Latin America found (Inter American Development Bank, 2004-7).³⁸ The situation appears to be similar in other regions also (UNPFII, 2007b). For example, the status of common property regimes in the drylands of India were severely weakened by the introduction of land reforms, the replacement of traditional village leadership with elected village councils, expanded private ownership, expanded credit and subsidies for animals, and more marketing links for CPR-related products. This had the effect of decreasing the regulation of common land use and expanding private ownership of land (Jodha, 1990, FAO, 1998). Increased private ownership of land resulted in the rural poor (including Indigenous Peoples) taking measures that reflected desperation such as premature harvesting of CPR products, the removal of roots/base of plants, overcrowding and overexploitation of CPRs and the use of inferior

³⁶ A tenure niche is a discrete area of land within a landscape defined by the specialized set of tenure rules that are applied to it (Fortmann and Nhira, 1993, as cited by Bruce, 2000).

³⁷ The 2006 International Conference on Agrarian Reform and Rural Development (ICARRD) recognized the need to establish administrative systems conducive to efficient registering, titling and surveying of land holdings, and ensure the formal recognition of customary and communal use rights in ways that are transparent, enforceable and consistent with community interests.

³⁸ Inter American Development Bank - www.iadb.org/sds/xindicators - various studies on land titling and registration were published between 2004-2007.

products.³⁹ Griffiths and Colchester (2000) also found that imprecise legalities together with thriving land and timber markets in India have led to rapid deforestation, rising concern about soil erosion, the emergence of village elites, growing social inequalities, privatization of communal land and intra-community land conflicts.

Fortunately for Indigenous Peoples, certain common pool resources are difficult or very costly to individualize and are best left in communal ownership. Examples include resources that cross boundaries (water courses, fish and migratory wildlife) or long-term investment in trees that have high management and opportunity costs which are more easily borne by a community than a household or individual (Bruce, 1999). Land privatization in arid grassland environments, where the herders' movements are determined by highly variable rainfall patterns and seasonal variations in resources, would require the establishment of a source of water for each discrete grazing unit. Since the costs would be too high for small stockowners, individualization of such resource rights is clearly unsustainable (Riddell, 2000).

However, studies carried out in Kenya on pastoralist livelihoods as a contribution to the work of the Legal Commission on the Empowerment of the Poor indicate increasing impoverishment of pastoralists as a result of land sales, land-grabbing by powerful elites, and erosion of pastoralist livelihoods and culture. The privatization and sub-division of land, encouraged by laws that promote individual tenure, are probably the greatest threats faced by pastoralist communities in Kenya (Verma, 2007).

The complexity of land tenure issues and multiple access rights to the same piece of land or natural resources, particularly under customary tenure systems, make it difficult to identify indicators that will adequately capture the status and trends of Indigenous Peoples' tenure security. However, some indicators have been proposed by different agencies (see Appendix table 1) to measure the extent to which Indigenous Peoples have 'ownership'⁴⁰ of lands (including marine territories), and what governance systems, customary laws, traditional ecological knowledge and legal frameworks are recognized by state governments and successfully implemented. Other indicators include the prevalence of land disputes and the status (recognition and implementation) of major international human rights instruments with regard to land.

(b) *Land alienation for concessions and protected areas*

Large areas of Indigenous Peoples' lands and territories have been privatized or made available by governments or even Indigenous Peoples themselves to commercial enterprises through concessions for logging, mineral and oil exploitation, hydro-electric dams, plantations or are designated as protected areas, for example, as national parks. Indigenous Peoples, as the traditional owners, often receive no compensation although such land alienation frequently completely destroys their traditional food and agro-ecological systems and their cultural identity. For example, in Viet Nam in the 1990s extensive areas of indigenous lands and forests were converted into coffee plantations largely owned by rich lowlanders based in Saigon. Massive protests by Indigenous Peoples took place in 2000 and afterwards. Indigenous Peoples cut down coffee trees and replanted their food crops, demanding that the government recognize and secure their land rights (UNPFII, 2005a). The pastoralist Maasai Peoples in Kenya and Tanzania have seen their grazing lands taken over by settler farmers and converted into agricultural lands

³⁹ Other studies have also correlated higher rates of forest clearance with tenure insecurity (Bohn and Deacon, 2000, Southgate *et al.*, 1991, Alston *et al.*, 2000, all cited by Godoy *et al.*, 2001)

⁴⁰ Some Indigenous Peoples prefer to use the term "relationship with the mother earth and land" instead of the term "access to and ownership of land".

(UNPFII, 2005a, Verma, 2007). “The destruction of the pastoralist economy around which their identities and cultures as indigenous peoples revolve is taking place with the full complicity of the State and the market” (UNPFII, 2005a). The very damaging effects of land alienation are also illustrated by the Chixoy Dam Legacy Study in Guatemala (Box 4) which examined the impact of the development of a mine on the local indigenous population. The study showed that development that disrupts culture by severing the connection to the land and traditional food systems can result in dire consequences for well-being, measured in terms of altered livelihood strategies and health.

Box 4 The Chixoy Dam Legacy Study

The Chixoy Dam legacy study (Johnston, 2005) provides a stark contrast between before and after “development” and displacement of Indigenous Peoples in Guatemala. Before the mine, for the people living in the Chixoy River Basin land rights were secure, and communal rights in many cases dated back to the 1800s. Communities lived in the same region where their ancestors lived. Fertile river basin lands provided a biannual harvest, fish was plentiful and available year round, and common property lands supported livestock and harvesting of palms and other resources as saleable goods. Ancient trade routes connected the area to the highlands. The socio-cultural fabric of life was tightly woven across a landscape maintained by trade, familial ties, cultural beliefs, and historical relationships. Today, after the establishment of the mine, life’s essentials can only be acquired with money, for water, power, firewood, commercial fertilizer, household food, clothing, school fees and supplies, land taxes, roofing and other materials to repair crumbling homes and community halls. Money is needed to travel to distant farmlands. Money is needed to pay for the time and assistance of lawyers and others who help prepare claims to secure long-promised compensation and other entitlements. And, people now lack access to the critical resources that once supported household and community income generation. Extreme poverty has contributed to malnutrition, causing many deaths in the first years of resettlement; health conditions are unstable as many people are unable to access traditional remedies and have no money to buy imported medicine. This case demonstrates how a close relationship to land and resources through secure tenure contribute to well-being. When that relationship is severed, and the land no longer provides a means of subsistence, when the market economy dictates livelihood strategies and there is restricted access to resources, well-being is severely reduced.

The industrial pollution caused by mining and oil and gas exploration and exploitation can also have very damaging effects on the lands and waterways still maintained and used by Indigenous Peoples, killing fish and animals, polluting drinking water, destroying crops and wild plants and undermining biodiversity. Plantations near their lands can also wreak considerable environmental damage on their crops and wild foods through the heavy use of agro-chemicals that permeate the air, soils and aquifers.

(c) Self-determination and land management/conservation

The legal recognition of rights to land and resources plays a key role in Indigenous Peoples’ efforts to achieve self-determination (IWGIA,1994) and to ensure their effective stewardship of their habitats.

Conservation through self-determination is an integrated social ecology/self-determination approach (Elford, 2002, Borrini-Feyerabend *et al.*, 2004) and is recognized in Article 29 of the UN Declaration on the Rights of Indigenous Peoples. This approach proposes that the conservation of Indigenous Peoples and their homelands must be under Indigenous Peoples’ control, or based on co-management principles. While this is often managed through the establishment of protected reserves or reservations for Indigenous Peoples, the results are not always satisfactory. Evidence from 324 biosphere reserves in 82 administrative regions/states in Central America indicated that the main problem faced by the reserves was one of proper

management (Batisse, 1993, cited by Elford, 2002) as well as problems associated with buffer zones and lack of local participation (Ishwaran, 1990, cited by Elford, 2002). While reserves provide territorial security, Indigenous Peoples within their borders do not necessarily receive legal title to their lands and resources and are only rarely invited to participate in co-stewardship management arrangements. All too often, they have been passive beneficiaries in externally-managed project activities. Evidence from Central America clearly illustrates that Indigenous Nations cannot achieve conservation by self-determination without a conducive local, national and international environment (see Box 5).

Box 5 Self determination and Conservation in Panama and Nicaragua

The Kuna Yala territory in Panama (Elford, 2002) is inhabited by the Kuna nation, some 30,000 people who retain an intimate relationship with the environment, and identify their culture with an expanse of land. Their oral history and culture support a livelihood that is in balance with nature. Despite a history of conflict (Spanish in the 16th century, expropriation of land in the early 1900s) they have managed to retain their traditional democratic political system. Although they have interacted with non-indigenous economies since the 16th century, they have retained extensive ecological knowledge and resource management practices. They have also maintained an intimate, mutually dependent relationship with the environment because they have retained control of their subsistence systems and ecosystems, adapting their social and cultural systems and their subsistence economies to incorporate market-oriented, cash-based activities (exhibiting resilience). Elford compares the Kuna with the Miskito in Nicaragua, who have parallel experiences, but the Miskito have been largely unsuccessful in implementing conservation practices because of lack of control of conservation initiatives in their homeland. Key here is the recommendation that it is advantageous for *“nations to be socially and culturally cohesive; to have legally recognized rights to control their land and resources; to be able to organize politically, to have an understanding of, and ability to interact with, external political, economic and education systems; and to have access to external financial and political support.”*

In 2002 the World Commission on Dams carried out an independent global review of the development effectiveness of large dams with specific reference to the situation of Indigenous Peoples. The review highlights the disproportionately negative impacts that Indigenous Peoples suffer from dam construction programmes if their right to self-determination is not fully recognized and they continue to be marginalized in the related decision-making processes (Earthscan, 2000, cited by Tebtebba Foundation, 2002).

There is a need for action by national governments to help communities protect their tenure systems from illegal encroachment. In Costa Rica, for instance, 49 percent of the land in the indigenous reserves is occupied by illegal settlers (Colchester *et al.*, 2004). Indigenous lands are also threatened in Brazil, where the indigenous Ka'apor have sought support for training guards to protect the borders of the Reserva Indígena Alto Turiaçu (Balee, 2004). Other studies indicate that the greatest source of land tenure insecurity is usurpation of land by government agencies for development initiatives. In such cases, the regularization of land tenure rights through a land registration programme provides much needed protection against these threats (Riddell, 2000).

There are nonetheless cases of positive government action. In the Philippines, for instance, the 1997 Indigenous People's Rights Act explicitly recognizes the rights of Indigenous Peoples to their ancestral lands, to self-determination and to the free exercise of their culture. Around 76,000 Indigenous Peoples (out of the total indigenous population of eight million) are direct beneficiaries of Certificates of Ancestral Domain, which recognize their inherent right to self-governance and self-determination and respect the integrity of their values, practices and institutions (UNDP, 2004). However, encroachment continues and these rights are not always respected despite the enabling legislation. The Republic of Panama, which is a priority area for biodiversity conservation (Condit *et al.*, 2001), is home to seven different Indigenous Peoples

who enjoy legal recognition of their sovereignty by the State. Panama was the first country in Latin America to recognize such rights for Indigenous populations and 22 percent of the national territory is now designated as sovereign indigenous reserves.

Possible macro-level indicators include numbers of countries with national laws that protect Indigenous Peoples' self-determination, sovereignty and rights to ancestral lands, territories and resources, as well as to management or co-management and conservation of their habitats. More specific indicators that could be applied in individual countries include numbers of beneficiaries (communities or individuals) from laws that recognize indigenous rights to lands and other natural resources, and measures to estimate time-series data on food availability/consumption, nutritional status, children's morbidity and mortality rates etc. in order to assess the impacts of different land regimes on food security and livelihoods.

(d) Land rights and gender

In most indigenous societies, women and men have distinct ritual, social and economic responsibilities (UNPFII, 2004, Verma, 2007). Under the prevailing traditional common property regimes, women have access to land for crops and other livelihood activities for which they are responsible. In some areas matrilineal inheritance is still common. The division of labour in rural areas varies according to the type of ecology and livelihood system (forest, coastal or inland waterways, drylands/pastures, humid tropics, temperate rainfed, Arctic/Antarctic), and ethnicity and culture. Women often have the main responsibility for cultivating subsistence food crops (as well as collecting firewood, fetching water and handling domestic and child care tasks) while men go hunting and fishing. However, in some cultures, women also go hunting and fishing, and men engage in agriculture. Thus, it is vital that these gender-specific roles and associated rights and opportunities are taken into account in the design of policies and programmes that affect Indigenous Peoples' food and agro-ecological systems and livelihoods.

However, many development interventions have not dealt fairly with indigenous women. In addition, men have tended to be the first to seize new opportunities offered by changing market forces. Women's rights of access and security of tenure are often eroded during agricultural transformation and social change processes. For example, male preferences for cash crops over food crops is leading to increasing areas of the best land under male-controlled cash crops and the progressive marginalization of women farmers. In other cases, women's access to land has been undermined by the increase in purchase of legal titles by men. Although reliable data from Indigenous Peoples is lacking, the trends in Jamaica and Liberia may be a proxy for the situation of many Indigenous Peoples. In Jamaica, for example, 56 percent of farms were owned by men in 1954 compared with 76 percent in 1961. Land settlement schemes also often grant titles or access rights to male household heads, who were assumed to be responsible for family sustenance, ignoring the fact that in many parts of the world women farmers are largely responsible for food production and security (du Guerny, 1999). A study in Liberia showed that the key to post-war reconstruction is the rebuilding of the country's traditional agriculture sector, which has suffered huge losses in agro-biodiversity. In one of the many villages studied, women had maintained more than 112 rice varieties, matching the seed type with such factors as the degree of slope, amount of insulation, soil type. If traditional seed stocks, which are the products of centuries of deliberate breeding and selection by women, are lost, many of Liberia's indigenous rice cultures will disappear and agricultural productivity is likely to fall by about 50 percent (Thomasson, 1991).

The introduction of individualized land holdings in indigenous areas, forced resettlement, compensation, registration of household heads for taxation or benefit-sharing purposes, and the availability of jobs in extractive industries have all tended to favour males over females. The result has been a marked erosion of indigenous women's rights and resulting poverty and loss of status (Griffen, 2001 and others cited by Colchester *et al.*, 2004). This concern was reflected in the Declaration of the 2006 International Conference on Agrarian Reform and Rural Development (ICARRD) which underlines the need to ensure sustainable and equitable access to and control over land and related resources in a manner that fully respects the rights and aspirations of rural people, women and vulnerable groups (ICARRD, 2006).

Indicators are needed to measure the impacts of change on indigenous women's security of tenure and the inter-related changes in women's decision-making capacity at the household, community or project level (see Appendix table 1). The indicators developed at the 2nd Global Consultation attempt to capture the extent of legal recognition and protection of indigenous women's rights to continued use of traditional lands, territories and resources for traditional food production and associated ceremonial uses (Appendix table 2).

5.1.2 Integrity of and access to sacred sites for ceremonial purposes related to use of traditional foods (Indicator area 6 in the set of 11 indicator areas)

Indigenous Peoples' access to sacred sites in their traditional territories is important for the continuation of their cultural practices. Sacred forest groves are preserved and maintained through culturally-based traditional management practices that protect certain species and habitats and mitigate environmental disturbances such as floods, droughts, and fires, by providing refugia for species from which they can re-colonize their habitats (Millennium Ecosystem Assessment, 2005). A range of traditions and values are embodied in sacred groves, forests and water bodies. For instance, these sites are often believed to be the homes of spirits and so access is usually restricted by taboos and customs. Sacred or fetish groves play a significant role in forest protection in Ghana (Amoako-Atta, 1998). Home to spiritual forces and centres of territorial cults inherited from past generations, these forested areas can be seen as social creations that encapsulate centuries of historical events and still operate as places of memory and conserve local biodiversity (Chouin, 2002). However, in the Western Ghats of Karnataka and parts of central India, traditions of maintaining ancient sacred groves like the Nagabanas and Bhoothastanas are being eroded, leading to the loss of biodiversity (Gadgil and Gokhale, 2005).

The Akwé: Kon Voluntary Guidelines (CBD, 2004) recognize the importance of considering the role of sacred sites in impact assessments and some researchers have suggested the existence and use of sacred sites by local communities, governments, development agencies and industrial enterprises as an indicator of the continuation of sacred groves (Laaksonen *et al.*, 2005) (see Appendix table 1). Other suggested indicators measure changes in the level of activity in sacred sites, and changes in the types and abundance of different species. The indicators developed at the 2nd Global Consultation (Appendix table 2) also stress the recognition and protection of sacred sites as well as comparisons of past and present use of sacred sites within traditional territories.

5.2 Abundance, scarcity and/or threats to traditional seeds, plant medicines and food animals as well as cultural practices associated with their protection and survival (Indicator area 2 in the set of 11 indicator areas)

This indicator area is associated with measures of the drivers⁴¹ of change in traditional food and medicinal resources. Well established relationships between biodiversity and food systems (Kuhnlein *et al.*, 2006, Thrupp, 2000), suggest that indicators which measure changes in the biodiversity of Indigenous Peoples' ecosystems can serve as proxy measures of changes in their traditional foods and medicines. At the global level, the main drivers of biodiversity loss in terrestrial systems are land use changes and changes in climate. In marine systems over-exploitation is the main driver. Globalization processes without clear rules and instruments to protect rights of ownership, access to and use of biodiversity are also major causes of biodiversity loss contributing to the deepening of poverty levels in many developing countries (Millennium Ecosystem Assessment, 2005).

Cultural diversity is being rapidly lost, in parallel to biological diversity, largely as a result of these same drivers (Maffi, 2001, Harmon, 2002, Millennium Ecosystem Assessment, 2005). Indigenous Peoples' cultures are being disrupted in part due to their close dependence on food resources that are disappearing or being degraded. Empirical evidence suggests that processes of acculturation can result in the loss of this important traditional ecological knowledge (Benz *et al.*, 2000, Zent, 2001). Since the use of both domesticated crops and wild food plants is shaped by culture and associated knowledge, the preservation of cultural systems is as important as the conservation of the associated biological resources (King and Eyzaguirre, 1999). Recognition of the links between culture and biological diversity can, moreover, lead to protection or even enhancement of these food resources (Kuhnlein *et al.*, 2006). For example, the culturally-based forest management system of the Ka'apor in Brazil (Balee, 1993), ensures greater environmental diversity than that found in 'pristine' conditions, where there is no human presence (Borrini-Feyerabend *et al.*, 2004).

Threats to Indigenous Peoples' habitats and associated food and medicinal sources are numerous, occur at multiple scales, and include resource extraction activities, population growth, marginalization of peoples, the spread of invasive species, loss of knowledge of biodiversity, cultural value changes, and use of introduced species. Some possible sub-categories for indicator development to help distinguish between these factors are: i) the type and distribution of traditional ecological and agro-ecological knowledge and the status of local biodiversity and agro-biodiversity; ii) the use of introduced seeds including genetically modified seeds; iii) habitat loss through land conversion (for mining, oil exploration, logging, grazing and plantations); iv) habitat degradation through contamination from industrial waste or agro-chemicals; and v) market expansion.

5.2.1 Traditional knowledge of biodiversity and agro-biodiversity

The protection and sustainable management of biodiversity represent an integral part of risk avoidance mechanisms in local communities and indigenous societies (Millennium Ecosystem Assessment, 2005). Most traditional food systems of Indigenous Peoples contain at least 70-100 species of traditional food plants (Kuhnlein *et al.*, 2006). Development does not necessarily erode traditional ecological knowledge (TEK). Zarger and Stepp (2004) found no change in ethnobotanical knowledge among children in Chiapas, Mexico, despite significant socioeconomic changes. Many societies show resistance to change or are able to successfully incorporate market-oriented production within their traditional resource management system (Borrini-Feyerabend *et al.*, 2004). However, lack of reliable baseline measures makes it difficult to estimate changes in

⁴¹ A driver is any natural or human-induced factor or process that *directly* or *indirectly* causes a change in an ecosystem (Millennium Ecosystem Assessment, 2005)

traditional ecological knowledge (Zerner, 2000, Godoy *et al.*, 2005) and how processes of change in knowledge systems affect their interaction with the local environment. Differences in methods of data collection also make it difficult to compare research results and draw generalizations about what causes variations in local traditional ecological knowledge. Reyes-Garcia *et al.* (2006) recommend developing a reliable compound measure of the different components of TEK that can be used for cross-cultural comparisons.

As yet, no trend data are available on traditional ecological and agro-ecological knowledge (TEAK). However, indicators of traditional knowledge are currently being developed by the Secretariat of the Convention on Biodiversity (CBD), the UNEP-World Conservation Monitoring Centre, in collaboration with UNESCO, and by the international NGO, Terralingua. These⁴² focus on areas of supportive policies and programmes, including education systems for the use of TEAK, numbers of Indigenous Peoples involved in traditional and non-traditional economic activities, and knowledge of different species and transmission of that knowledge as well as the status and trends of linguistic diversity and numbers of speakers of indigenous languages. These indicators are also designed to measure the impact of the drivers of change.

5.2.2. Loss of biodiversity through the use of introduced and genetically modified seeds

The active management of genetic diversity in agricultural systems is a conservative strategy employed by subsistence farmers to ensure their food supplies under variable conditions. The genetic traits of many local varieties include resistance to drought and pests, tolerance to such conditions as salinity, yield improvement characteristics, nutritional quality, processing and storage attributes, and medicinal properties. The loss of plant (and animal) genetic diversity reduces opportunities to select for desirable traits both now, and in the future.

The UN system is making considerable efforts to protect the genetic diversity of traditional crops. The International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGR) promotes and supports farmers' and communities' efforts to manage and conserve their plant genetic resources for food and agriculture. The CBD's Global Plan of Action emphasizes the need for improved management and conservation of biodiversity. Nonetheless, a major issue for Indigenous Peoples and for many farmers in general, is the use of genetically modified (GM) seeds that either displace or could potentially hybridize with traditional varieties, sometimes forcing farmers to buy new seeds every year.

Genetic Use Restriction Technologies (GURTs), colloquially known as 'terminator seeds',⁴³ could someday undermine or destroy the livelihoods of many farmers. For Indigenous Peoples, these seeds represent an unequal relationship between farmers and those who own the right to produce the seeds. The Subsidiary Body on Science, Technology and Technological Advice to the Conference of the Parties of the CBD outlined potentially negative impacts of GURTs (SBSTTA, 2003). These include: the possible displacement of local crop varieties, locally-adapted genetic material and wild relatives; the displacement of traditional farming systems and the social, cultural and spiritual dimensions associated with these, including the storage, exchange and cultural uses of seeds and seed-bearing plants; and limits on the rights and prerogatives of indigenous and local communities with regard to traditional knowledge and community cultural values. Currently, there are insufficient data on the impact of GURTs on agricultural biodiversity and key ecosystem functions. It is clear that more research is needed on the impact of these technologies and, in the meantime, the precautionary principle should apply.

⁴² All indicators and their sources mentioned in this section are listed in Appendix table 1.

⁴³ These seeds are not viable and are unable to reproduce themselves.

There are cases where Indigenous Peoples prefer the advantages conferred by higher yielding commercial crop varieties including genetically modified crops if they provide higher economic returns, and insect and drought resistance. However, as evidenced in the Indian state of Kerala, the adoption of high yielding varieties has resulted in the loss of traditional rice varieties although local people agree that these cultivars have superior flavour and taste (Gadgil and Gokhale, 2005). Work with hillside maize farmers in Central America has shown that hybrids do not offer higher rates of return on investment than traditional open pollinated varieties. Government programmes often subsidize or distribute high yielding commercial seed, including hybrids, rather than local varieties. Yet Indigenous Peoples and other farmers often claim that these do not perform as well under local conditions as their own seed. Furthermore, when an integrated systems approach is applied, the advantages usually lie with the traditional varieties. Moreover, if the advantages are marginal, farmers usually opt for traditional varieties because they taste better, are easier to cook and are more adapted to local conditions. (I. Cherrett, personal communication, 22 August 2006).

Indicators are suggested (see Appendix table 1) that compare the level of use of introduced seeds with the use of traditional varieties and compare measures of the yield, consumption, price and preference of traditional crops with those same measures of introduced or GM crops. These measures would indicate the extent of shift from local/traditional to introduced varieties. Further research is needed on the implications for food security.

5.2.3 Habitat loss through land conversion (i.e. monocultures) and environmental degradation

The extent of habitat loss and ecosystem degradation is a measure of the threats to traditional seeds, plant medicines and food animals since local ecosystem integrity is essential for the maintenance of traditional food systems. The Convention on Biodiversity (CBD) recognizes that traditional and direct dependence on renewable resources and ecosystems, including sustainable harvesting, continues to be essential to the cultural, economic and physical well-being of Indigenous Peoples and their communities. Similarly, the Akwé: Kon Voluntary Guidelines (CBD 2004) state that:

“Most indigenous and local communities live in areas where the vast majority of the world's genetic resources are found. They have used biological diversity in a sustainable way for thousands of years and their cultures and knowledge are deeply rooted in the environment on which they depend. As a result, developments proposed to take place on lands and waters traditionally occupied by Indigenous and local communities have been a source of concern to these communities because of the potential long-term negative impacts on their livelihoods and traditional knowledge”.

In particular, forest ecosystems play a significant role in supplementing staple foods and offering insurance against malnutrition or famine, particularly during seasonal food shortages or emergencies such as droughts, floods or wars (Vicente *et al.*, in press, 2008). They also provide a valuable source of forage as evidenced by a recent study in Mexico that found 18 different forage species in a tropical forest (Dalle 2006, cited by Vicente *et al.*, in press 2008). The destruction of forest cover, wetlands and other uncultivated areas for pastures or cultivation can also lead to a decline in agricultural biodiversity through the loss of ‘wild’ relatives of crop plants, birds, fish and livestock breeds. Cash cropping systems based on monocultures have displaced subsistence agriculture and the associated customary knowledge and practices. Monocultures may increase economic productivity for large farmers but may prove inefficient in the long term with pest

infestation or as environmental conditions fluctuate. This is where time-tested traditional crops may in some cases be the most suitable for local ecological conditions.

Suggested indicators (Appendix table 1) to capture the extent of shift from subsistence to commercial agriculture and monocultures and the related impacts on crop genetic diversity focus on changes in the local flora and fauna. Other indicators measure the extent of threats to resources and habitat (such as land conversion, climate change, contaminant levels) and the type of protection mechanisms in place, including the extent of Indigenous Peoples' inclusion, participation and employment in ecosystem management.

5.2.4 Market expansion

Assessing the social, economic, cultural and environmental effects of markets on Indigenous Peoples' natural resource conservation and management practices is important for identifying policies and programmes to improve their well-being while protecting the sustainability of their resource base (Godoy *et al.*, 2005). People who participate in markets usually acquire new language skills, attitudes, and values (Lane, 1991, Bowles, 1998, Lazear, 1999, all cited by Godoy *et al.*, 2005). This sometimes leads to a process of acculturation which can negatively affect traditional ecological and agro-ecological knowledge, undermining traditional food and agro-ecological systems.

The Indigenous Peoples' Seattle Declaration (1999) and Via Campesina⁴⁴ state that the WTO Agreement on Agriculture (AOA), which promotes export competition and import liberalization, has allowed the entry of cheap agricultural imports into indigenous communities, undermining local production and their associated integrated and ecologically balanced agricultural practices.

In order to measure the impact of market expansion on the availability and use of traditional seeds, medicinal plants and food animals, proposed indicators (refer to Appendix table 1) focus on the number of Indigenous Peoples who participate in non-traditional economic activities compared with those who practice traditional subsistence activities. Measures of Indigenous Peoples' access to markets to sell local products and the prevalence of traditional exchange and reciprocity systems compared with cash payments for labour and other services are also indicative of the extent of engagement in the global or regional market economy.

Indicators developed at the 2nd Global Consultation include baseline measures of the availability and condition of these traditional food resources and measures of impacts of policies and programmes to restore or protect these resources.

5.3 Use and transmission of methods, knowledge, language, ceremonies, dances, prayers, oral histories, stories and songs related to traditional foods and subsistence practices, and the continued use of traditional foods in daily diet as well as in relevant cultural/ceremonial practices

5.3.1 Consumption and preparation of traditional plant and animal foods and medicines, including in ceremonial/ cultural use as well as daily household use (Indicator area 3 in the set of 11 indicator areas)

⁴⁴ Via Campesina

(http://www.viacampesina.org/main_en/index.php?option=com_content&task=view&id=180&Itemid=27)

Almost three quarters (72 percent) of the respondents to the IITC questionnaire stated that their communities have initiated activities to strengthen, protect and/or restore their traditional subsistence foods and practices. Almost all (96 percent) of the respondents considered it very important for their community to keep cultivating, hunting, fishing, gathering, herding and eating their traditional foods in order to maintain an active and healthy life. Respondents also expressed concern about food aid donations of imported, canned and surplus foods, as well as genetically modified foods they perceive as harmful to their health.

The continued use of traditional cultural practices has been linked to well-being and community wellness in ethnographic studies (Adelson, 1998) but there are few epidemiological data that confirm this (Chandler and Lalonde, 1998). Several publications⁴⁵ confirm that traditional food systems can enhance Indigenous Peoples' quality of life, including their nutritional and health status and cultural expression (Kuhnlein, 2005, Salehi *et al.*, 2005, Johns, 2004, Receveur and Kuhnlein, 1998, and Receveur *et al.*, 1997). Culture plays a key role in ensuring adequate nutrition, since the appropriateness of foodstuffs, food taboos and food distribution are culturally determined (Villarreal, 2000). Disruptions to traditional subsistence activities can restrict Indigenous Peoples' capacity to protect their nutrition and health (Lawrence *et al.*, 1980, Wirsing, 1985, Coimbra *et al.*, 2002, all cited by Godoy *et al.*, 2005). Development processes often lead to dietary changes that result in increased chronic conditions such as obesity and diabetes. Such consequences could be reduced with more attention to the principles of diet and health that are already contained within the culture, and with recognition of the nutrient properties of traditional food resources (Kuhnlein *et al.*, 2006). Environmental degradation resulting, for example, from industrial mining, toxic by-product storage and agro-chemicals that contaminate water and other natural resources, also adversely affects the health of Indigenous Peoples (Stephens *et al.*, 2006).

A study that measured the level of psychological distress against different socio-cultural factors, such as participation in traditional activities, was conducted with the James Bay Cree in Quebec, Canada (Kirmayer *et al.*, 2000). Based on 833 interviews, the researchers found that higher scores on the indicators of i) age, ii) having a good relationship with the community and iii) the number of weeks spent in the bush, were associated with significantly less distress. The number of weeks spent in the bush in the past year was particularly important, most likely because bush life involves contact with nature, spiritual relations with animals, consumption of valued foods and participation in other traditional activities. Increased time in the bush may also confer 'mental health benefits by increasing family solidarity and social support, reinforcing cultural identity, improving physical health with nutritious bush foods and exercise, or providing respite from the pressures of settlement life.' (Kirmayer *et al.*, 2000). Studies of cosmological belief systems in Amazonia have also emphasized the deep material, social, moral, spiritual, and ceremonial connections between humans and natural biota (Descola, 1996; Arhem, 1996; Viveiros de Castro, 1998; Cayón, 2002; Rival, 2002; Cormier, 2003, all cited by Zent and Zent (in press)).

A caveat, however, is that the export of traditional food, such as bush meat, for Indigenous Peoples living in urban areas may create more pressure on already endangered species (African Environmental Outlook 1, 2004). In many African countries where bush meat is important to local peoples' traditional food systems and food security (Mainka and Trividi, 2002), the impact on some species, such as primates, is severe and local action to alleviate these pressures may be required even at the cost of certain cultural traditions. There is concern also in Suriname where high demand for bush meat by indigenous employees in the Bakhuis Bauxite Mine Project could

⁴⁵For example, research by Kuhnlein and others at the Centre for Indigenous Nutrition and Environment (CINE) at McGill University in Montreal, Canada.

encourage over-hunting in the neighbouring area and local depletion of endangered species such as the tapir (Goodland, 2006).

Suggested indicators to measure changes in the use of traditional foods and medicines include measures of changes in the production and consumption of staple foods (crops, wild animal and plant species) and medicines, and their nutritional and health impacts. Indicators developed at the 2nd Global Consultation (Appendix table 2), which were similar to those proposed by IFAD (Appendix table 1), also attempt to capture the extent and impact of participation in programmes that aim to reinforce the value of traditional foods and associated cultural practices.

5.3.2 Continued practice and use of ceremonies, dances, prayers, songs and stories and other cultural traditions related to the use of traditional foods and subsistence practices (Indicator area 4 in the set of 11 indicator areas)

Most of the IITC survey respondents stated that traditional subsistence foods and practices were very important for maintaining their community's culture. The Declaration of Atitlán⁴⁶ emphasizes the cultural value of Indigenous Peoples' agricultural and food systems and, in turn, the importance of indigenous cultures and ceremonial practices to sustainable agriculture and food systems.

Ceremonies, oral traditions such as stories, songs and oral histories and other cultural practices such as reciprocity, are important cultural elements in the maintenance and transmission of knowledge and practices of traditional food and agro-ecosystems. The loss of these cultural practices creates a disconnect in the relationship between culture and traditional food systems. However, the impacts of development processes on these culture-food relationships are mixed.

For instance, the West Kitikmeot/Slave Study in the North West Territories, Canada, assessed the impact of diamond mining on the indigenous communities using a set of 20 community-derived indicators to measure participation in cultural activities, such as participation in the Lutselk'e Spiritual Gathering, the use of Dene songs and traditional skills in butchering and preparing caribou and training the youth in land-based skills. Mining activities, despite their negative impact on the environment, had little impact on cultural activities. While some 65 percent of people interviewed were "very concerned" about the potential long-term environmental effects of the mines, they reported that there had been no effect on the spiritual values associated with the site, land use activities (hunting and trapping), traditional knowledge of drumming and songs or traditional skills in hunting and butchering caribou (Parlee and Marlowe, 2000). However, other evidence suggests that mining and the extraction of oil and gas in indigenous territories rarely benefit the Indigenous Peoples (UNPFII, 2005a). Thus, the benefits to Indigenous Peoples of mining, as with other development activities, appear to be mixed. Even in cases where there are clear economic benefits and neutral cultural impacts, the environmental issues need careful attention.

Research conducted with subsistence farmers in the hills of Nepal (Pant, unpublished data) shows that traditional uses of local crop varieties in festivals and lifecycle ceremonies can help maintain agricultural biodiversity. Specific crop varieties are preferred in major celebrations, such as *Selroti*, a ring shaped bread prepared from *Gurdi* and *Madishe* landraces of rice and are essential in major festivals, such as *Dashain* and *Tihar*, and important life cycle celebrations such as *Bartabandha* and *Bibaha*. Bread prepared from other rice varieties would not be as good or might be regarded as religiously impure. As long as these traditional beliefs and ritual practices are

⁴⁶ Adopted at the 1st Indigenous Peoples' Global Consultation on the Right to Food in 2002.

valued in the socio-cultural system, those landraces and the biodiversity they represent are likely to be preserved.

Researchers have debated whether markets worsen the well-being of Indigenous Peoples by eroding their traditional social structure and cultural traditions, such as traditional practices of sharing. Participation in market transactions has been found to threaten traditional reciprocal exchange systems which ensure sharing of food in times of shortage, and the group cooperation these systems foster. These practices were found to have changed among Indigenous Peoples in Peru, who shared purchased goods less than goods produced at home (Putsche, 2000). However, in both the Sierra and the Selva of Peru, inter- and intra-ethnic exchanges have always focused on imported (manufactured) goods (P. Warren, personal communication, 2006).

Indicators that measure the extent of the relationship between ceremonies and oral traditions and traditional foods and subsistence practices have been proposed by several different agencies and researchers (see Appendix table 1). These include measures of the extent of participation in and knowledge of traditional spiritual ceremonies related to food and associated freedom of belief, thought and expression. The continued use of totems related to food as well as the number of religious ceremonies and festivals connected with subsistence practices or use foods in the ceremonies are also possible indicators. The indicators shown in Appendix table 2, developed at the 2nd Global Consultation, show the important role of institutions and ceremonies in transmitting cultural practices associated with traditional food production systems.

5.3.3 Preservation and continued use of language and traditional names for foods and processes (planting, hunting, gathering, harvesting, fishing, food preparation etc.) (Indicator area 5 in the set of 11 indicator areas)

Cultural concepts are expressed in and through language – and language reflects the history, modes of thought, and institutions of a culture. Knowing a language provides a strong sense of cultural identity and a sense of wellness (Parsons Yazzie cited by Reyhener, 2001). “Language is our unique relationship to the Creator, our attitudes, beliefs, values and fundamental notions of what is truth. Our Languages are the cornerstone of who we are as a People. Without our Languages our cultures cannot survive.” (Assembly of First Nations, 1990).

“In the same way that a healthy planet requires biological diversity, a healthy cultural world requires linguistic diversity. Yet, language is also an elaborate phenomenon tied to real people and cultures. Language loss threatens a fundamental human right—that of expression of the life and life ways of a people. Each language relates ideas that can be expressed in that language and no other. Thus, when an indigenous community is no longer allowed to pray, sing, or tell stories in its language, it is denied a fundamental human right. Unfortunately, linguistic rights have been seriously abused for hundreds of years by banning specific languages and indirectly by assaulting language-support structures such as land, economies and religions. ...Languages today are the next frontier in setting the country into moral and environmental symmetry” (Quotation from Wilhelm Meya, Director of the Lakota Language Consortium).

Linguistic and cultural diversity have been threatened by processes of globalization, such as acculturation, market expansion, and biodiversity loss as well as through education and assimilation policies and programmes. Current statistics indicate that of the estimated 10,000 languages that have ever existed, only about 6,000 are spoken today, and the number is projected to drop by 50 to 90 percent over the next 100 years. In Australia, some 500 languages have been lost since the arrival of Europeans (UNDP, 2004). The loss of indigenous languages can have a dramatic effect on Indigenous Peoples’ ability to maintain their traditional knowledge and food

systems. In Mexico, for example, knowledge of plant uses dropped as skills in Spanish increased (Benz *et al.*, 2000). Similarly, knowledge of forest trees declined among 104 Amerindians in Venezuela with an increase in formal schooling or fluency in spoken Spanish (Zent, 2001). Another study found that only 13 percent of children receiving primary education in sub-Saharan Africa were taught in their mother tongue despite the well-known negative implications for the children's development (UNDP, 2004).

The World Rainforest Movement Charter of the Indigenous-Tribal Peoples of the Tropical Forests (1992) calls for the establishment of bilingual and intercultural educational systems that "revalidate our beliefs, religious traditions, customs, and knowledge; allowing our control over these programmes, by the provision of suitable training, in accordance with our cultures; in order to achieve technical and scientific advances for our peoples, in tune with our own cosmovisions, and as a contribution to the world community."

The loss of those aspects of language associated with food and agro-ecological systems has been considered a proxy indicator of the loss of knowledge associated with agro-biodiversity (CBD, 2006). The relationship works the other way as well: with the loss of agro-biodiversity and biodiversity comes the loss of associated language terms.

There are several data sources on the numbers of speakers of indigenous languages, such as the Solidarity Foundation's compilation of census data on populations of indigenous tribes in North America going back to 1900; and other published sources, such as the two editions of *Les Langues du Monde* by Meillet and Cohen (Harmon *et al.*, 2006), as well as UNESCO's indicator of cultural practices and heritage: leading languages (Table 6 in UNESCO, 2000). The NGO Terralingua⁴⁷ has been gathering trend data on numbers of mother-tongue speakers from a geographically and culturally representative sample of the world's languages, with a focus on indigenous languages⁴⁸ (Harmon *et al.*, 2005). A global indicator on the status and trends in linguistic diversity and numbers of speakers of indigenous languages is one of 12 headline indicators selected by the CBD at the 7th Conference of the Parties in February 2004, to measure progress towards its 2010 targets for halting the loss of biodiversity.

While efforts are underway to measure the status of indigenous languages, other indicators have been proposed to measure the extent of use of indigenous languages in the media and education systems. Also indicators are proposed that measure the extent to which an indigenous language is used for naming species and ecosystem features and the extent to which indigenous language forms the basis of songs and stories (refer to Appendix table 1). Other indicators, developed at the 2nd Global Consultation (Appendix table 2) are also designed to measure the level of engagement by community members in maintaining language(s) and cultural practices associated with traditional food systems.

5.3.4 Existence and viability of mechanisms and institutions created by and accessible to Indigenous Peoples for transmission of food related traditional knowledge and practices to future generations (Indicator area 9 in the set of 11 indicator areas)

⁴⁷ Terralingua's Index of Biocultural Diversity (IBCD) (Loh and Harmon, 2005) is a measure of biocultural diversity. Covering most countries, it is based on measures of ethno-linguistic and biological diversity and compares countries in terms of their diversity value. It is, however, a static index and does not contain time-series data.

⁴⁸ The proposed indigenous languages index (Harmon *et al.*, 2005) will measure average trends over time in the numbers of speakers of a large number of indigenous languages, to form an index of cultural diversity.

The purpose of this proposed indicator area is to monitor the effectiveness of community-level indigenous institutions in engaging in decision-making processes that affect traditional food and agro-ecosystems and food security. Both formal and informal institutions are important, the latter including story telling and interactions between the elders and youth which enable the inter-generational transmission of knowledge, practices and beliefs associated with sustainable food and agro-ecosystems.

The Millennium Ecosystem Assessment conducted a meta-assessment of several community-based studies that assessed the links between ecosystem services and human well-being, taking account of multiple knowledge systems, including traditional knowledge. Local institutions were found to be important in conferring authority on knowledge-holders, so that local-level knowledge is used at higher decision-making levels on matters that affect indigenous communities (Ericksen and Woodley *et al.*, 2005). Legal recognition of local-level institutions can reinforce their influence at higher scales (Uphoff, 1986).

Globalization often entails a periodic substitution of culture and cultural knowledge by mainstream knowledge and formal institutions; however, endogenous institutions provide the backbone for the survival of socio-cultural norms and practices (Kurien, 2001). Such institutions play an important role in ensuring the continuity of traditional food systems and agro-ecosystems through the transmission of related traditional knowledge, beliefs and practices across generations, while taking into account the fact that culture is dynamic and changing. Depending on the gender division of labour, traditionally indigenous children and youth worked alongside their parents, learning by doing. These traditions are often being weakened as young people go to school, or have aspirations to migrate to urban areas. Other customary mechanisms include seed exchanges among and between generations, reciprocal labour exchange among families, the use of ritual foods in ceremonies and festivals, storytelling and cooking apprenticeship. In this context, it is critical to identify factors that interfere with or provide opportunities for elders to pass on their knowledge to the youth as well as to identify skills, traditional knowledge and practices that are no longer appropriate to the changing environment (CBD Secretariat, 2004).

For Indigenous Peoples to engage effectively in political dialogue with national decision-makers, there is a need for their political empowerment through their own representative or participatory institutions which enable indigenous communities to articulate their specific interests and to mobilize to influence decision-making processes (Craig and Tester, 1992, Utting, 1993, cited by Elford, 2002, IWGIA, 1994, O'Faircheallaigh, 1999).

Indicators that are under consideration for this indicator area (see Appendix table 1) include measures of the existence of traditional knowledge-holders, the persistence of customary law, policies and programmes protecting traditional knowledge, the incorporation of traditional knowledge in national school curricula, teaching in schools in indigenous languages and the level of involvement of the youth and elders in community decision-making. Other proposed indicators include the existence of laws regulating the activities of local-level institutions and the extent of use of traditional ecological and agro-ecological knowledge in higher-level formal institutions. Indicators developed at the 2nd Global Consultation include measures of laws and programmes that support the roles of indigenous institutions in the transmission of local traditional knowledge, identify the type and level of benefits enjoyed by different community groups from these programmes (disaggregated by women, youth, men and age) and the use of modern communication technologies (including radio, drama and songs) to disseminate traditional knowledge (Appendix table 2).

5.4. Capacity by Indigenous Peoples for adaptability, resilience, and/or restoration of traditional food use and production in response to changing conditions including migration, displacement, urbanization and environmental changes

5.4.1 Migration and movement away from traditional lands as a result of rural-to-urban migration, conflict, forced relocation, land appropriation, climate change, and economic necessity; return patterns and relationships to continued use of traditional foods (Indicator area 7 in the set of 11 indicator areas)

Rapidly increasing rural-urban migration provides a major challenge to Indigenous Peoples' adaptive capacity in all regions of the world. In 1995, 44.8 percent of the world's population lived in urban areas, with increases predicted to 50 percent in 2008 and 57.5 percent by 2025 (UN 2007, UNFPA, 2007). The reasons for migration are varied and include the pull factors of urban amenities and employment and push factors such as conflict, forced relocation due to land appropriation, ecological changes including climate change, and economic necessity. For example, in many countries small-scale farm production is giving way to large-scale commercial farming, which concentrates ancestral lands in the hands of a few agri-corporations and landlords, triggering out-migration from indigenous communities to urban areas. Often joining the urban homeless and jobless, the dislocation from their traditional social, economic and cultural support systems means that many indigenous migrants live in distressful conditions (Indigenous Peoples' Seattle Declaration, 1999).

The appropriation of Indigenous Peoples' traditional lands and territories for mining, oil extraction, logging or hydro-electric power generation is another major cause of migration. For instance, after the Chixoy Dam was built (Johnston, 2005) (see Box 4) many indigenous families were unable to produce sufficient food and income from locally-available resources, forcing increasing numbers to leave home in search of work while those remaining were obliged to rely upon remittances from an absent relative. Before the construction of the dam, 2 percent of households reported a family member working in wage/labour jobs in the city and 54 percent reported family members working for *part* of the year on distant farms, compared with the post-dam situation with 29 percent reporting income from one or more adults working year-round in the city and 43 percent reporting income from migrant work on distant farms, as a regular rather than occasional income generation strategy. After the construction of the dam, the male household head was gone for part or all of every year. This income generation strategy fractures the family and the community with profound consequences for family and community social dynamics and the reproduction of cultural norms and traditions.

Economic crises can also be powerful push factors. For instance, the consequences of economic structural adjustments in the Dominican Republic have been rapid rural to urban migration, with the rural population declining from 68 percent in 1960 to 35 percent in 1999 (FAO, 2000, cited by Pomeroy and Jacob, 2004). Although the figures are not disaggregated by indigenous/non-indigenous population groups, it is likely that there has also been considerable out-migration from indigenous communities. The traditional agrarian society with its close family ties and communal bonds that revolve around natural cycles has been replaced by an urban setting, disconnected from the environment, resulting in "anomie", the sense of "normlessness". Those who remain in rural areas, who are more likely to be women and children, also find their lives and social networks disrupted (Pomeroy and Jacob, 2004).

While limited data are available on the cultural impacts of rural-urban migration, research in several African countries (Bryceson, 2000) indicates that rural-urban migration has profound and far reaching consequences for social structures, cultural traditions and the division and

organization of labour that are grounded in local land use. The move to an urban environment severs the migrants' connection with their traditional ecosystem and its related culturally-based knowledge and practices and results in serious acculturation.

Some proposed indicators of migration include measures of demographic shifts from traditional territories to urban areas, household income and use of non-traditional, purchased foods, gender ratios in households and the associated agricultural workloads for men and women, and the extent of traditional ecological and agro-ecological knowledge of returnee migrant workers (see Appendix table 1). Indicators from the 2nd Global Consultation include measures of the status of implementation of laws and agreements relevant to indigenous migrants (Appendix table 2).

5.4.2. Capacity within Indigenous communities and Peoples for adaptability, resilience, resistance and/or restoration of traditional food use and production in response to changing economic, political and/ or environmental conditions (Indicator area 10 in the set of 11 indicator areas)

Resilience⁴⁹ is the capacity or ability of peoples or communities to adapt to changing circumstances such as expansion in the market economy, dramatic price fluctuations, new job opportunities in urban areas, loss of traditional land or waterways to mineral or oil exploitation, logging, plantations or national protected areas, changing political structures, schooling, environmental degradation and pollution, and climate change. Some of these changes may be long-term, providing ample time to adapt, while others may be sudden. The concept of resilience can also include the evolution of cultural knowledge and practices that contribute to successful adaptation strategies for all these different types of changes, including those that affect indigenous food systems. As can be predicted from the conceptual framework on sustainable livelihoods, indigenous communities' capacity to adapt varies according to many factors, including the type and severity of the change, threat or risk, their access to the five capitals, the policy environment and the degree of organization and preparedness. The capacity for self-organization is key to ensuring resilience (Abel *et al.*, 2006). Measures of resilience are important indicators of how well individuals or communities accommodate to change.

The evidence is mixed on indigenous communities' capacities to adapt their food and agro-ecological systems to changing environmental, social, political, economic and market conditions. In north and northeast Thailand, for example, the sacred forest protection systems were traditionally the most resilient form of common property regime. Around 1970, some communities began to develop new local forest regimes to protect watershed forests and communal woodland in response to growing shortages of water and forest products. Improved local protection and management also permitted more intensive and sustainable use of these resources (FAO, 1998). In West Kalimantan, Indonesia, indigenous and other communities responded to a reduction in land area by incorporating or intensifying within their forest systems the cultivation of tree crops with economic value such as rubber, rattan and durian (FAO, 1998). While the livelihoods of Pygmies in Cameroon are traditionally assured through hunting, gathering and fishing in the forests, agriculture is becoming increasingly important as part of their strategy to survive as forest resources are depleted (Tchoumba, 2005).

However, in other indigenous communities traditional adaptation strategies have proved ineffective to cope with change. Pastoralists in sub-Saharan Africa, for example, have well-tried

⁴⁹ The capacity of a system to tolerate impacts of drivers or recover from impacts without irreversible change in its outputs or structure.

mechanisms for surviving in erratic and risky environments. Their strategies include livestock accumulation, herd movements following rainfall, breed and species diversification, and herd dispersion between community members. Yet, these systems are proving vulnerable in the face of a combination of factors that include periodic droughts and climate change impacts, economic exclusion from markets, livestock epidemics, national and civil wars, re-drawing of territorial boundaries, risks of conflict over increasingly scarce resources and changes in land tenure policies and laws (Rass, 2006, Verma, 2007).

Some proposed indicators of resilience (see Appendix table 1) include the extent of local knowledge about the relationship between changing ecological conditions and changes in traditional foods and agro-ecological systems. The number of different food production and procurement strategies adapted to changing ecological conditions and the degree of their implementation in indigenous communities are also indicators. Indicators from the 2nd Global Consultation include measures of efforts to re-establish traditional knowledge and practices and adapt traditional food systems to changing environmental, market and social conditions (Appendix table 2).

5.5 Ability of Indigenous Peoples to exercise and implement their rights including self-determination and free, prior and informed consent, as well as their self-government structures, to promote and defend their Food Sovereignty and related aspects of their development

5.5.1 Effective consultations for planning, implementation and evaluation applying the principles of free, prior and informed consent and full participation by community members when development programmes are implemented by states, outside agencies or other entities and the extent to which cultural concerns are considered and addressed (Indicator area 8 in the set of 11 indicator areas)

Indigenous Peoples' organizations maintain that various types of development activities imposed on indigenous communities have had negative impacts on their traditional food and agro-ecosystems. Such impacts can only be avoided if development programmes are carried out with the free, prior and informed consent (FPIC) of the indigenous communities with traditional rights to the lands, territories or resources concerned. The full and effective participation of the concerned indigenous communities (including their traditional leadership and indigenous women) should be assured in all phases of programme planning, implementation, evaluation and follow-up (IITC, 2004, IFAD, 2005). Yet, the IITC survey revealed that only 16 percent of the development programmes implemented in the respondents' communities enjoyed full community involvement in their planning and implementation. Some communities did not receive any prior information about the programmes, and others expressed concern that only collaborators or profiteers were consulted.

Proposed indicators include the number of development programmes that involve collaborative or co-management partnerships with participating communities (Appendix table 1). Other indicators include measures of support for indigenous capacity, leadership, policy and programme development by state and indigenous governance, including number of programmes and persons participating in and completing trainings. Indicators developed at the 2nd Global Consultation (Appendix table 2) include the level of participation by Indigenous Peoples in project planning and implementation and the extent to which local food systems that are important for food sovereignty have been maintained through self-determination mechanisms.

The issues related to this indicator area are closely linked to those of the final indicator area (discussed in 5.5.2) that deal with the ability of Indigenous Peoples to use and implement their rights, including the right to free, prior and informed consent. Thus these two sections should be viewed as complementary.

5.5.2. Ability of Indigenous Peoples to utilize and implement recognized rights, legal norms and standards as well as self-government structures to promote and defend their Food Sovereignty on the local/tribal/community, national and international levels (Indicator area 11 in the set of 11 indicator areas)

Indigenous Peoples are often insufficiently aware of their rights and could benefit from capacity building and legal advice about collective and individual rights as well as guidance on how to handle negotiations on informed consent regarding interventions on their lands and territories, including the types of information and guarantees they should receive prior to giving consent. Recognizing gender inequality as a major development constraint and acknowledging the specific role of indigenous women as agents of change in sustainable development is also important. Special emphasis should be placed on obtaining FPIC from indigenous women in all interventions that affect their livelihoods or aim to strengthen their capabilities and their agency⁵⁰ (IFAD, 2005).

The interrelated issues of Intellectual Property Rights (IPR) and Access and Benefit-Sharing (ABS) are briefly addressed below.

(a) Intellectual Property Rights (IPR)

Physical property rights and intellectual property rights form a complex whole consisting of cultural heritage, collective knowledge and territorial rights (Saugee, 1994, Posey and Dutfield, 1996, as cited by Tucker, 2004). The rights to define property and manage land and other resources in ways compatible with local knowledge, cultural heritage and livelihood needs are all related issues (Tucker, 2004). Several Indigenous Charters emphasize this important relationship.⁵¹ The UN has made progress in recognizing that land and resource rights are integrated with indigenous IPR. The UN Declaration on the Rights of Indigenous Peoples, the COICA-UNDP Regional Meeting on Intellectual Property Rights and Biodiversity, the UNDP Consultation on the Protection and Conservation of Indigenous Knowledge (Tucker, 2004) and the International Treaty on Plant Genetic Resources for Food and Agriculture all recognize the inter-dependencies between land and other resource rights and intellectual property rights.

Conventionally, Intellectual Property Rights are conferred upon individuals and corporate entities, and are not applicable in cases of community ownership or spiritual significance of traditional knowledge. Instead, the laws protect the work of individual, identifiable authors or inventors (UNDP, 2004). Article 29 of the 2007 UN Declaration on the Rights of Indigenous Peoples, states that Indigenous Peoples are entitled to the recognition of the full ownership, control and protection of their cultural and intellectual property. They have the right to special measures to control, develop and protect their sciences, technologies and cultural manifestation, including human and other genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, inland waterway and deep seabed genetic resources, oral traditions, literatures, designs and visual and performing arts. However, these rights are often not respected and

⁵⁰ Agency is the capacity for autonomous action in the face of constricting social sanctions and structural inequalities.

⁵¹ The Charter of the Indigenous-Tribal Peoples of the Tropical Forests; The Indigenous Peoples' Earth Charter; The Declaration of Principles of the World Council of Indigenous Peoples.

Indigenous Peoples are often excluded from negotiations for the use of biogenetic resources in their territories (Dutfield, 1997, UNPFII, 2005a). One study, for example, found that 7,000 patents had been granted for the unauthorized use of traditional knowledge or the misappropriation of medicinal plants (Forero, 2003, cited in UNDP, 2004). For Indigenous Peoples, protection of knowledge and resources, and continuation of customary laws and practices related to land and resource use, are central to the maintenance of their cultural identity and are aspects of human rights. The Maori in Aotearoa-New Zealand believe that even when their knowledge is publicly disclosed, there is no automatic right to use it—that right must be determined collectively (UNDP, 2004).

(b) Access and Benefit-Sharing

In October 2001, the Ad Hoc Open-ended Working Group on Access and Benefit-Sharing, established by the Conference of the Parties to the Convention on Biological Diversity, prepared the Draft Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization, an international regime to promote and safeguard the fair and equitable sharing of benefits arising out of the utilization of genetic resources and designed to assist State Parties in developing national legislation in this regard. The Guidelines recommend that “respecting established legal rights of indigenous and local communities associated with the genetic resources being accessed or where traditional knowledge associated with these genetic resources is being accessed, the prior informed consent of indigenous and local communities and the approval and involvement of the holders of traditional knowledge, innovations and practices should be obtained, in accordance with their traditional practices, national access policies and subject to domestic laws”. The Guidelines were subsequently adopted by the Conference of the Parties at its VI session in April 2002 through Decision VI/24. Although they are not binding, they nonetheless have the potential to influence the development of national access and benefit-sharing laws.

This is significant because the Convention on Biological Diversity does not explicitly state that it is necessary to get the FPIC of constituent communities, although it has been argued that the requirement to obtain such consent is implicit in the text of the Convention which states in Article 8 j) “Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices”. Therefore, the Bonn Guidelines go one step further in this regard, by offering an interpretation of the Convention that clarifies an outstanding ambiguity (FAO, 2004).

The Ad Hoc Open-ended Working Group on Access and Benefit-Sharing and the Working Group on Article 8j. of the Convention on Biological Diversity, are developing indicators of access and benefit-sharing because, “Without explicit recognition and protection of the rights of Indigenous Peoples and local communities, there can be no respect, preservation or maintenance of traditional knowledge for future generations.” (International Indigenous Forum on Biodiversity (IIFB) opening statement in the CBD, 2006b).

Lessons from the Philippines suggest that creative approaches to obtaining consent from and sharing benefits with local communities, including Indigenous Peoples, need to be developed, and an effective institutional system put in place to implement these measures (Laird, 2001). Most

prospecting for commercial exploitation of biodiversity focuses on traditional knowledge systems of food and medicinal species, often dating back hundreds of years and involving complex cultural relationships between people and the natural world. Of the approximately 120 pharmaceutical products derived from plants in 1985, 75% were discovered through the study of their traditional medical use (Farnsworth *et al.*, 1985 cited by Laird, 2001). National access and benefit-sharing measures have nonetheless often failed to compensate Indigenous Peoples adequately and there is an urgent need to develop fair benefit-sharing with local communities (Laird, 2001).

The complex challenges of enforcing Indigenous Peoples' intellectual property rights and fair access and benefit-sharing are still far from adequately met and concerted efforts are required before their customary knowledge is protected and/or fairly compensated. Indicators proposed by agencies working in these areas include measures of the level of awareness of intellectual property rights and access and benefit-sharing amongst affected Indigenous Peoples and what legislation is in place and is enforced to regulate access and benefit-sharing. Indicators developed at the 2nd Global Consultation (Appendix table 2) include laws to protect the collective bio-cultural heritage and the level of awareness of 'rights'.

Chapter 6

Conclusions and recommendations

Indigenous Peoples, who represent at least 5000 culturally diverse indigenous groups, constitute about 5.5 percent of the world's population and account for a large share of the world's cultural and biological diversity; yet they are largely marginalized in most countries where they are heavily represented among the poor. Poverty eradication efforts have largely bypassed indigenous communities. Conventional indicators of poverty generally do not capture the realities of many Indigenous Peoples who have been deprived of the rights to self-determination, access to their traditional lands, territories and resources, and food and food sovereignty. Indigenous Peoples' cultural practices and traditional food systems are mutually supportive and both are vital for their food security and overall well-being, yet these systems are being degraded or destroyed for a number of reasons discussed in the paper. Confronted with this situation, Indigenous Peoples are increasingly conscious of the need to engage in policy dialogue and negotiations with decision-makers to protect their rights and their food and agro-ecological systems and to restore them where needed. For this, they need good, reliable data to support their arguments. While a number of UN bodies and specialized agencies, government agencies and NGOs are involved in the development of relevant indicators, actual data on Indigenous Peoples' well-being remain scarce. Hence, the need to develop indicators that reflect their particular vision and to collect and analyse data on these indicators.

6.1 Relationships between Indigenous Peoples' cultures and food and agro-ecological systems

The suggested indicator areas in Table 1 reflect the high level of complexity in the relationships between Indigenous Peoples' cultures and food and agro-ecological systems and in the ways in which changes in one aspect has repercussions for other aspects of these relationships. Research findings throw light on some of these relationships - such as the relationship between secure tenure and cultural identity and the implications for biodiversity and food security if either are undermined. However, there are some areas where more research is needed, such as the indicator areas on adaptability and resilience and on self-determination. A summary of the relationships that are substantiated with evidence from research or from UN recognition in declarations, conventions and covenants are listed below according to three categories: i) food and agro-ecosystems, ii) land tenure and iii) knowledge, beliefs and practices:

Food and agro-ecosystems

1. Biodiversity is positively related to the availability of a wide range of traditional food crops and wild foods;
2. The loss of forest habitat results in the loss of traditional supplementary foods and medicinal plants;
3. Market expansion for cash cropping or extensive livestock raising may lead to deforestation and/or a reduction in subsistence agriculture and the displacement or permanent loss of some food crops and the associated knowledge and practices;
4. Sacred sites (for example, sacred forest groves) are associated with the preservation of biodiversity;
5. There is considerable concern that the use of Genetic Use Restriction Technology (GURT) negatively affects traditional crop varieties, local wild plant, animal and fish foods, traditional ecological knowledge (TEK), and traditional cultural practices associated with traditional food and agro-ecological systems; and

6. The use of traditional foods contributes to positive health outcomes.

Land Tenure

1. Secure land tenure systems strengthen cultural identity;
2. Insecure land tenure is associated with increased land alienation, for instance, for mining, plantations, logging;
3. Agricultural transformation is associated with reduced tenure security for women farmers, loss of women's rights and status, and individualization of land and production practices which disrupt traditional ways of life;
4. Land privatization is associated with the erosion of customary land rights and traditional resource management practices;
5. Sacred sites are important for cultural identity and for the preservation of common property systems; and
6. Self-determination is required for sustainable development and resource conservation.

Knowledge, Practices and Worldview

1. Traditional Ecological Knowledge (TEK) is lost through acculturation processes which occur in several ways;
2. Rural to urban migration causes a disconnection from the environment and a subsequent loss in TEK;
3. Loss of language is associated with loss of cultural identity and cultural continuity and a reduction in TEK;
4. Market expansion reduces the frequency of engagement in traditional exchange systems and traditional systems of reciprocity;
5. Development activity (such as mining) has not necessarily been associated with reduced traditional spiritual practices but is associated with environmental degradation;
6. Some traditional cultural practices such as time spent in the bush can reduce psychological distress; and
7. Strong and vibrant local institutions are important for the survival of cultural norms and practices.

The 1st and 2nd Global Consultations for Indigenous Peoples on the Right to Food and Food Security have made significant progress in the identification of indicator areas relevant to Indigenous Peoples' concerns to protect their food sovereignty and deal with the threats to their traditional food systems, access to land and resources, cultural practices related to food systems, adaptive strategies for resilient food systems and the right to self-determination. The indicator areas agreed upon by consensus reflect the culmination of many years of dialogue among Indigenous Peoples and their organizations. The indicator areas now require the development of a set of measurable indices and a methodology for their implementation.

6.2 Recommendations

For all stakeholders:

- 1. A re-definition of development that emphasizes the importance of culture⁵² is needed, so that the values identified as key to Indigenous Peoples' survival move into the mainstream.**

⁵² "Development with identity is the project of life of the Indigenous Peoples based on their own logic and worldview. It is the natural growth of Indigenous Peoples, of their flora and of their fauna based on principles of self-determination in relation to land, territories, and natural resources. It is also respect for

- 2. The role of culture in sustainable agricultural and rural development** should be made more explicit in guiding development policy relating to Indigenous Peoples' rights to food and food security. Current policies are inadequate and there is a paucity of data to inform policy development and monitor the impacts of development interventions on Indigenous Peoples' culture, food security and well-being.

For Governments:

- 3. The rights of Indigenous Peoples to their traditional lands, territories and resources** (as called for in UN declarations, conventions and covenants) should be protected, maintained or restored and indicators developed and applied to monitor progress in and impacts of such measures on Indigenous Peoples.
- 4. Since the security of common property systems of tenure contributes to cultural identity and well-being**, such communal systems governed by customary law, traditional knowledge and cultural practices should be protected in indigenous areas. Indicators should be developed and applied to measure progress and impacts of such measures on indigenous common property tenure systems.
- 5. Threats to Indigenous Peoples' traditional food systems are numerous** and governments, assisted by international organizations as appropriate, should make efforts to reduce the vulnerability of indigenous communities to these threats. Indigenous Peoples' rights to food sovereignty should be respected, including their rights to chose their own food systems, maintain their cultural practices, utilize their food-related knowledge and be protected from the spread of GMOs, monocultures and other activities that undermine traditional food production systems. Indicators should be developed to monitor the situation and impacts of any measures undertaken to improve Indigenous Peoples' conditions and rights in these respects.
- 6. Governments should implement measures to ensure that Indigenous Peoples' free, prior and informed consent** is obtained before developments are undertaken in their lands and territories, and that they receive adequate compensation for lost resources and a fair share of benefits obtained from the commercial exploitation of these resources. Indicators to measure compliance and impacts should be introduced.
- 7. Indigenous Peoples require support for capacity-building and financial resources to monitor the cultural impacts of changes to their food systems.** Due to the contextual nature of cultural indicators, it is crucial that Indigenous Peoples be involved in collecting and analysing such data themselves (as suggested also by the UNPFII (2006)), and national governments should facilitate and support these efforts.

For UN organizations:

- 8. Networking and collaboration among UN organizations which are developing indicators is essential** in order to avoid duplication, enhance synergies and reduce costs. In addition to collaboration on the many initiatives currently underway to develop cultural indicators, it is also important to disaggregate by indigenous/non-indigenous populations data collected in

their individual and collective rights. It is the welfare and security of our peoples.” (2nd Global Consultation on the Right to Food and Food Security for Indigenous Peoples, Nicaragua, September 2006).

other relevant on-going surveys and to include indicators related to the right to food and food security in existing survey instruments, frameworks and methodologies, disaggregated by indigenous/non-indigenous population groups.

- 9. Research is needed to ascertain how UN agencies are using or planning to use indicators and associated data sets on Indigenous Peoples' food and agro-ecological systems** in their own organizations, with a view to mainstreaming Indigenous Peoples' issues within their organizations' policies and work programmes and providing a reasoned basis, substantiated by facts and figures, for advocacy for policy and legal reforms to ensure Indigenous Peoples' rights. Coordination among these efforts would reinforce synergies and impacts.

For Indigenous Peoples' organizations:

- 10. Research and discussion among Indigenous Peoples and Indigenous Peoples' Organizations on establishing thresholds and targets** for specific indicators, and the collection and analysis of data on these indicators, are needed in order to improve the relevance and effectiveness of policy development.
- 11. Indigenous Peoples should be encouraged to apply the cultural indicators on food and agro-ecological systems**, collect and analyze data, publish and disseminate conclusions and key factors/data to policy makers in order to press for policy and legal reforms and measure the impact of such reforms.
- 12. Indigenous Peoples should be informed about the IITC cultural indicator development programme and this paper.** Traditional authorities should be encouraged to discuss and address issues related to these indicators with a view to improving their effectiveness in capturing the specific realities of Indigenous Peoples' food and agro-ecological systems.
- 13. Indigenous Peoples need to play a more proactive role in the policy arena** to enhance understanding of the role of culture in their food and agro-ecological systems, sound the alert on possible threats from various types of development and advocate for their rights to the protection and respect for their traditional food systems and their food sovereignty. Their effectiveness in these efforts will be enhanced if they are supported by appropriate and reliable data.

References

- Abel, N., Cumming, D. H. M. & Anderies, J. M.** 2006. Collapse and reorganization in social-ecological systems: questions, some ideas, and policy implications. *Ecology and Society* 11(1): 17. (also available at www.ecologyandsociety.org/vol11/iss1/art17/).
- Adelson, N.** 1998. Health beliefs and the politics of Cree well-being. *Health* 2(1): 5-22.
- African Environment Outlook.** 2004. *African Environment Outlook 1. Biodiversity*. UNESCO. Paris.
- Altieri, M.A.** 1995. *Agroecology : the science of sustainable agriculture*. Boulder, Colorado. Westview Press, London: IT Publications.
- Amnesty International.** 2001. *Americas: Indigenous people at high risk of human rights violations*. (available at www.amnesty.org/en/alfresco_asset/67c966df-a39c-11dc-9d08-f145a8145d2b/amr010082001en.pdf).
- Amoako-Atta, B.** 1995. Sacred Groves in Ghana. In: Von Broste, B., Plachter, H. & Rossler, M. (eds.) *Sacred Sites, Cultural Integrity and Biological Diversity*.
- Anderson, T. & Poppel, B.** 2002. Living Conditions in the Arctic. *Social Indicators Research*, 58: 191–216.
- Ashley, C. & Carney, D.** 1999. *Sustainable livelihoods: Lessons from early experience*. Department for International Development (DFID). London.
- Assembly of First Nations.** 1990. Towards Linguistic Justice for First Nations. Principles for Revitalization of First Nations' Languages.
- Assembly of First Nations.** 2006. *First Nations' Holistic Approach to Indicators*. Ottawa, United Nations Secretariat of the Permanent Forum on Indigenous Issues.
- Baleé, W.** 1993. Indigenous Transformation of Amazonian Forests. *L'Homme*: 126-128. 231-254.
- Balee, W.** 2004. An indigenous Associação in Eastern Amazonian Brazil. 2nd Sesquiannual Conference of the Society for the Anthropology of Lowland South America, Florida International University, North Miami Campus, Miami, Florida.
- Baranyi, S. & Weitzner, V.** 2006. Transforming land-related conflict: policy, practice and possibilities: background paper. Ottawa and Rome, North South Institute and International Land Coalition: 40.
- Barthlott, W., Biedinger, N., Braun, G., Feig, F., Kier, G. & Mutke, J.** 1999. Terminological and methodological aspects of the mapping and analysis of global biodiversity. *Acta Botanica Fennica* 162: 103-110.

Benz, B.F., Cevallos E. J., Santana M. F., Rosales A. J. & Graf M. S. 2000. Losing knowledge about plant use in the Sierra de Manantlan Biosphere Reserve, Mexico. *Economic Botany* 54:183-191.

Borrini-Feyerabend, G., Michel Pimbert, M., Farvar, T., Kothari, A. & Renard, Y. with Jaireth, H., Murphree, M., Pattemore, V., Ramirez, R., & Warren, P. 2004. *Sharing Power: Learning by doing in co-management of natural resources throughout the world.* London, IIED and IUCN.

Bruce, J. 2000. African tenure models at the turn of the century: individual property models and common property models. *Land Reform* 2000 (1). FAO Information Division. Rome.

Byrceson, D. 2000. *Rural Africa at the crossroads: Livelihood practices and policies.* Natural Resource Perspectives 52: April 2000. London, Overseas Development Institute.

Carino, J. 2005. Indigenous Peoples, Human Rights and Poverty. In Tebtebba Foundation, *Making the MDGs Relevant for Indigenous Peoples. Indigenous Perspectives.* Volume vii, No. 1: 28-46. Philippines, Tebtebba Foundation.

Carney, D., ed. 1998. *Sustainable Rural Livelihoods: What contribution can we make?* Department for International Development (DFID). London.

CBD. 2005. Indicators for assessing progress towards the 2010 biodiversity target: status of traditional knowledge, innovations and practices. Ad Hoc Open-ended Inter-Sessional Working Group on Article 8(j) and Related Provisions of the Convention on Biological Diversity. Fourth meeting, Granada, Spain: 10.

CBD. 2006. International Indigenous Forum on Biodiversity (IIFB). Conference of the Parties Eighth Meeting. Curitiba, Brazil

CBD. 2004. *Akwé: Kon Voluntary Guidelines for the conduct of cultural, environmental and social impact assessments regarding developments proposed to take place on, or which are likely to impact on, sacred sites and on lands and waters traditionally occupied or used by indigenous and local communities.* Montreal, Secretariat of the Convention on Biological Diversity.

Chandler, M. J. & Lalonde, C. 1998. Cultural Continuity as a Hedge Against Suicide in Canada's First Nations. *Transcultural Psychiatry*, 35(2): 191-219.

Chouin, G. 2002. IDS Bulletin abstracts. (available at www.ids.ac.uk/ids/bookshop/bulletin/bull331abs.htm)

CIP-UPWARD. 2003. *Conservation and Sustainable Use of Agricultural Biodiversity. A Sourcebook.* Philippines, Laguna, CIP-UPWARD.

Colchester, M., Griffiths, T., Mackay, F. & Nelson, J. 2004. Indigenous Land Tenure: Challenges and Possibilities. *Land Reform. Land Settlement and Cooperatives.* FAO. Rome.

Commonwealth Foundation. 2005. *Breaking with Business as Usual: Perspectives from Civil Society in the Commonwealth on the Millennium Development Goals.* London, Commonwealth Foundation.

Condit, R., Robinson, W.D., Ibáñez, R., Aguilar, S., Sanjur, A., Martínez, R., Stallard, R., García, T., Angehr, G., Petit, L., Wright, S.J., Robinson, T.R. & Heckadon, S. 2001. Maintaining the canal while conserving biodiversity around it: a challenge for economic development in Panama in the 21st century. *Bioscience* 51: 389-398.

Cornell, S. & Kalt, J. P. 1998. Sovereignty and Nation-Building: The Development Challenge in Indian Country Today. *Joint Occasional Papers on Native Affairs*. 2002-03. Reprinted from *American Indian Culture and Research Journal*, 22(3): 187-214.

Craig, F. E. & Tester, F. J. 1992. Indigenous Peoples: Reassessing Directions for SIA. In C. C. Geisler, R. Green, D. Usner and P. West, eds. *Indian SIA: The Social Impact Assessment of Rapid Resource Development on Native Peoples*. University of Michigan.

Crawhill, N. 2006. MDGs, Globalisation and Indigenous Peoples in Africa.

DeLind, L. & Bingen, J. 2004. Introduction. *Culture and Agriculture* 27(2): 88-91.

Descola, P. & Palsson, G., eds. 1996. Nature and Society. *Anthropological Perspectives*. London, Routledge.

DFID. 2000. Sustainable Livelihoods Framework Guidance Sheets (available at www.livelihoods.org/info/guidance_sheets_rtf/Sect2.rtf). London, Department for International Development.

du Guerny, J. 1996. Gender, Land and Fertility - Women's Access to Land and Security of Tenure (available at www.fao.org).

Dutfield, G. 1997. *Between a rock and a hard place: Indigenous peoples, nation states and the multinationals*. University of Oxford, Oxford. Programme for Traditional Resource Rights, Oxford Centre for the Environment, Ethics and Society.

ECLAC. 2006. Report of the Workshop on Indicators for follow-up of the AGRO 2015 Plan for the Improvement of Agriculture and Rural Life in the Summit of the Americas. Port of Spain, Trinidad and Tobago.

Elford, D. 2002. Conservation by self determination in Central America. *Fourth World Journal* 5(1): 98-149.

Encyclopedia of the Nations. 2007. *Bolivia* (available at www.nationsencyclopedia.com/economies/Americas/Bolivia.html).

Ericksen, P. & Woodley, E. 2005. Using Multiple Knowledge Systems: Benefits and Challenges. In D. Capistrano, C. Samper, M. J. Lee & C. Raudsepp-Hearne eds. *Ecosystems and Human Well-Being. Multiscale Assessments*. Washington, Covelo, London, Island Press.

Esmail, T. 1997. Designing and scaling-up productive natural resource management programs: Decentralization and Institutions for Collective Action. Decentralization, Fiscal Systems and Rural Development Programme. Technical Consultation on Decentralization, 16-18 December 1997. FAO, Rome.

Fairhead, J. and Leach, M. 1996. *Misreading the African Landscape*. African Studies Series 90. Cambridge, Cambridge University Press.

FAO. 1996. *Declaration and Plan of Action*. World Food Summit, 13-17 November, Rome.

FAO. 1998. *Managing forests as common property* by J.E.M. Arnold. FAO Forestry Paper 136. Rome.

FAO. 1999. *Legal Bases for the Management of Forest Resources as Common Property*, by J.W. Bruce. Rome.

FAO. 2002. *The State of Food Insecurity in the World 2001*. Rome.

FAO. 2003. *Multilingual Thesaurus on Land Tenure*, edited by Ciparisse, G. Rome

FAO. 2004. *Building on Gender, Agro-biodiversity and Local Knowledge*. A Training Manual. Rome.

FAO. 2005. *Rapid guide for missions. Analysing local institutions and livelihoods*, by A. Carloni. Rural Institutions and Participation Service series: Institutions for Rural Development No.1.

FAO. 2006. *The State of Food Insecurity in the World 2006*. Rome

FAO. 2006. Final Declaration of the International Conference on Agrarian Reform and Rural Development (**ICAARD**). Porto Alegre, Brazil, 7-10 March 2006.

FAO. 2007a. *Indigenous Peoples' Right to Food*, by L. Knuth, L. Rome (available at www.fao.org/righttofood/)

FAO. 2007b. *The Right to Food. Questions and Answers*. Rome.

FAO. 2007c. *SARD and Indigenous Culture*. The SARD Initiative. Rome (available at www.fao.org/sard).

Fingleton, J. S. 1998. *Legal Recognition of Indigenous Groups*. FAO Legal Papers Online (available at www.fao.org).

Four Directions Council. 1996. *Forests, Indigenous Peoples, and Biodiversity: Contribution of the Four Directions Council to the Secretariat of the Convention on Biological Diversity*. Lethbridge, FDC.

Gadgil, M. & Gokhale, Y. 2005. Summary of India Local Assessment for Millennium Ecosystem Assessment. In D. Capistrano, C. Samper, M. J. Lee & C. Raudsepp-Hearne eds. *Ecosystems and Human Well-Being: Multiscale Assessments*, pp. 333-334. Washington, Covelo, London, Island Press.

Global Land Tool Network. 2006. Development of innovative pro-poor land tools. Report from a workshop jointly organized by UN-HABITAT, the Norwegian Ministry of Foreign Affairs, Norad, the Norwegian Mapping Authority and Sida. Oslo, 23-24 March 2006.

Godoy, R., Kirby, K. & Wilkie, D. 2001. Tenure security, private time preference, and use of natural resources among lowland Bolivian Amerindians. *Ecological Economics* 38: 105-118.

Godoy, R., Reyes-García, V., Byron, E., Leonard, W.R. & Vadez, V. 2005. The Effect of Market Economies on the Well-Being of Indigenous Peoples and on Their Use of Renewable Natural Resources." *Annual Review of Anthropology* 34: 121-138.

Goodland, R. 2006. Suriname. Environmental and Social Reconnaissance. The Bakhuy's Bauxite Mine Project. A report prepared for The Association of Indigenous Village Leaders of Suriname (VIDS) and The North-South Institute (NSI).

Griffiths, T. & Colchester, M. 2000. *Indigenous peoples, forests, and the World Bank*. UK, Moreton-in-Marsh. Forest Peoples Programme.

Harmon, D. 2002. *In Light of our Differences: How Diversity in Nature and Culture makes us Human*. Washington, DC, Smithsonian Institution Press.

Harmon, D., Loh, J. et al. 2005. Measuring Traditional Environmental Knowledge for the Convention on Biological Diversity.

HLCLEP. 2006. First Meeting of the HLCLEP Co-Chair's Outcome Document, UN High Level Commission on Legal Empowerment of the Poor.

HRI/MC. 2006. International Human Rights Instruments. Report on indicators for monitoring compliance with international human rights instruments. Eighteenth meeting of chairpersons of the human rights treaty bodies, Geneva, 22-23 June 2006; Fifth inter-committee meeting of the human rights treaty bodies, Geneva, 19-21 June 2006.

Human Rights Council. 2006. Resolution 2006/2. Working group of the Commission on Human Rights to elaborate a draft declaration in accordance with paragraph 5 of the General Assembly resolution 49/214 of 23 December 1994.

IASG. 2006. Report of the Inter-Agency Support Group on Indigenous Issues. New York, UN Permanent Forum on Indigenous Issues.

IFAD. 2003. *Indigenous Peoples and Sustainable Development*. Roundtable Discussion Paper for the Twenty-Fifth Anniversary Session of IFAD's Governing Council. Rome.

IFAD. 2005. *Free, Prior and Informed Consent and Beyond. The Experience of IFAD*. International Workshop on Methodologies Regarding Free, Prior and Informed Consent and Indigenous Peoples, 17-19 January 2005. New York, UN Permanent Forum on Indigenous Issues.

IFAD. Date n.a. *Indigenous Peoples* (available at www.ifad.org).

IIFB. 2006a. *Cross-cutting Approaches to the Implementation and Monitoring of the Goals MDG 7: Indicators Relevant for Indigenous Peoples and the Convention on Biological Diversity*. Indigenous International Forum on Biodiversity. Permanent Forum on Indigenous Issues Fifth Session: 2., New York, UN Permanent Forum on Indigenous Issues.

IIFB. 2006b. Opening Statement. Convention on Biological Diversity, Conference of the Parties, Eighth Meeting, 20-31 March 2006, Curitiba, Brazil. International Indigenous Forum on Biodiversity (IIFB).

IITC. 2002. *An analysis of United States international policy on Indigenous Peoples, the human right to food and food security.* Palmer, Arkansas, International Indian Treaty Council.

IITC. 2002. *Declaration of Atilán.* Indigenous Peoples' Consultation on the Right to Food: A Global Consultation, 17-19 April 2002. Sololá, Guatemala.

IITC. 2003. Final Report on an Indigenous Peoples' Initiative to Establish Cultural Indicators for SARD: Questionnaire on Indigenous Peoples' Traditional Foods and Cultures. Palmer, Arkansas, International Indian Treaty Council.

IITC. 2004. *Human Rights, the Right to Food, and Indigenous Peoples.* Palmer, Arkansas, International Indian Treaty Council.

IITC. 2006. *Framework and summary of key issues for the development of cultural indicators for food security, food sovereignty and sustainable development.* Paper for the Meeting on Indigenous Peoples and Indicators of Well-Being, Aboriginal Policy Research Conference, 22-23 March, Ottawa. Palmer, Arkansas, International Indian Treaty Council.

IITC. 2006. *Cultural Indicators for Food Security, Food Sovereignty and Sustainable Development. Conclusions and Recommendations.* The Second Global Consultation on the Right to Food, Food Security and Food Sovereignty for Indigenous Peoples, 7-9 September 2006. Bilwi, Puerto Cabezas, Nicaragua.

ILO. 1957. Indigenous and Tribal Populations Convention (No. 107). Geneva.

ILO. 1958. Discrimination (Employment and Occupation) Convention (No. 111). Geneva.

ILO. 1989. Indigenous and Tribal Peoples Convention (No. 169). Geneva.

ILO. 2007. *Newsletter. The ILO and Indigenous and Tribal Peoples.* Geneva.

IMF. 2001. *Factsheet.* Washington DC.

Indigenous Peoples' Seattle Declaration 1999. Indigenous Peoples' Seattle Declaration, Third Ministerial Meeting of the World Trade Organization.

Inter-American Development Bank. 2004-2007. Studies on land titling and registration (available at www.iadb.org/sds/xindicators).

Inter-American Development Bank. 2006. *Social Indicators and Equity Information System for Latin America and the Caribbean*, by J.A. Mejia (available at www.iadb.org/sds/xindicators).

IUCN 1997. *Indigenous Peoples and Sustainability. Cases and Actions.* IUCN Inter-Commission Task Force on Indigenous Peoples. Utrecht, the Netherlands, International Books.

IWGIA. 2004. Land Rights: A Key Issue. *Indigenous Affairs Newsletter 4/04* (available at www.iwgia.org/graphics/Synkron-Library/Documents/publications/Downloadpublications/IndigenousAffairs/IA42004.pdf).

IWGIA. 2006. UN Forum urges inclusion of indigenous peoples' concerns in global anti-poverty goals. International Working Group on Indigenous Affairs.

Jodha, N.S. 1990. Common property resources – Contributions and crisis. *Economic and Political Weekly*, June 30, A65-A78.

Johns, T. 2004. Agrobiodiversity, diet and human health. In D. I. Jarvis, C. Padoch & D. Cooper, eds. *Managing Biodiversity in Agricultural Ecosystems*. New York, Columbia University Press.

Johnston, B.R. 2005. Chixoy Dam Legacy Issues Study. Volume 3: Consequential Damage Assessment of Chixoy River Basin Communities: Material Consequences of Dam Construction, Involuntary Displacement and Damage and Loss of Critical Resources.

Kapijimpanga, O. 2005. Poverty Reduction Strategy Papers and the Millennium Development Goals. In Commonwealth Foundation. *Breaking with Business as Usual: Perspectives from Civil Society in the Commonwealth on the Millennium Development Goals*. London, Commonwealth Foundation.

King, A. B. & Eyzaguirre, P. B. 1999. Intellectual property rights and agricultural biodiversity: Literature addressing the suitability of IPR for the protection of indigenous resources. *Agriculture and Human Values* 16: 41-49.

Kirmayer, L. J., Boothroyd, L. J., Tanner, A., Adelson, N. & Robinson, E. 2000. Psychological Distress Among the Cree of James Bay. *Transcultural Psychiatry* 37(1): 35–56.

Kuhnlein, H.V. 2005. Task Force: Indigenous Peoples' Food Systems and Nutrition, International Union of Nutritional Sciences.

Kuhnlein, H. V., Smitasiri, S., Yesudas, S., Bhattacharjee, L., Dan, L. & Ahmed, S. 2006. *Documenting Traditional Food Systems of Indigenous Peoples: International Case Studies. Guidelines for Procedures*. Montreal, 2004 Centre for Indigenous Peoples' Nutrition and Environment, McGill University, Canada: 120.

Kurien, J. 2001. *The socio-cultural aspects of fisheries: Implications for food and livelihood security - A Case Study of Kerala State, India*. Rome, FAO.

Laaksonen, A. & Foundation, I. 2005. Third Global Forum on Human Development: Defining and Measuring Cultural Exclusion. Paris.

Laird, S. A. 2001. The Convention on Biological Diversity: changing ethical and legal frameworks for biodiversity research and prospecting. *Unasylva* No. 206. Rome, FAO.

Livestock in Development. 1998. The Integration of Livestock Interventions into a sustainable Rural Livelihoods Approach. In **Carney, D.**, ed. *Sustainable Rural Livelihoods: What contribution can we make?* Department for International Development (DFID). London.

- Lizarralde, M.** 2001. Biodiversity and loss of indigenous languages and knowledge in South America. In L. Maffi, ed. *On Biocultural Diversity: Linking Language, Knowledge, and the Environment*, pp. 265-81. Washington, DC, Smithsonian Institution Press.
- Loh, J. & Harmon, D.** 2005. A global index of biocultural diversity. *Ecological Indicators* 5: 231-241.
- MacKay, F.** 2004. Indigenous peoples' rights to lands, territories and resources: selected international and domestic legal considerations. *Land reform, land settlement and cooperatives* 2004/1: 80-95. Rome, FAO.
- Maffi, L.** ed. 2001. *On Biocultural Diversity: Linking Language, Knowledge and the Environment*. Washington, DC, Smithsonian Institution Press.
- Mainka, S. & Trivedi, M.** Eds. 2002. *Links between biodiversity conservation, livelihoods and food security: the sustainable use of wild species for meat*. Occasional papers of the IUCN Species Survival Commission; No. 24. Gland, Switzerland; Cambridge, UK, IUCN.
- Mckinley, T.** 1997. *Cultural Indicators of Development*. Paris, UNRISD/UNESCO: 19.
- Millennium Ecosystem Assessment.** 2005. *Ecosystems and Human Well-being. Synthesis*. Washington, DC, Island Press.
- Moore, S. E., Leslie-Young, H. & Lavis, C.A.** 2005. Subjective well-being and life satisfaction in the kingdom of Tonga. *Social Indicators Research* 70: 287–311.
- Mühlhäusler, P.** 1996. *Linguistic Ecology: Language Change and Linguistic Imperialism in the Pacific Rim*. London, Routledge.
- Nations, J. D.** 2001. Indigenous Peoples and Conservation: Misguided Myths in the Maya Tropical Forest. In: L. Maffi, ed. *On Biocultural Diversity. Linking Language, Knowledge, and the Environment*. Washington, DC, Smithsonian Institution Press.
- Nichols, E.** 2002. Indigenous Self-Determination over Land-based Cultural Heritage: A Comparative Study of Australian Aborigines, Native Americans and Papua New Guinean Customary Landholders. *Asia Pacific Journal of Environmental Law* 7(issue 3/4).
- Nyamugasira, W.** 2005. Civil society and the Millennium Development Goals in the Commonwealth. In Commonwealth Foundation. *Breaking with Business as Usual: Perspectives from Civil Society in the Commonwealth on the Millennium Development Goals*. London, Commonwealth Foundation.
- O'Faircheallaigh, C.** 1999. Making Social Impact Assessment Count: A Negotiation-Based Approach for Indigenous People. *Society and Natural Resources* 12(1): 63-80.
- Pant, L. P.** (in progress). Linking crop diversity with food traditions and food security in the hills of Nepal. School of Rural Planning and Development. Guelph, University of Guelph.
- Parlee, B. & Marlowe, E.** 2000. *Traditional Knowledge Study of Community Health, West Kitikmeot, Slave Study* (available at www.wkss.nt.ca).

- Pomeroy, C. & Jacob, S.** 2004. From Mangos to Manufacturing: Uneven Development and its Impact on Social Well-Being in the Dominican Republic. *Social Indicators Research* **65**: 73–107.
- Posey, D.A.,** ed. 1999. *Cultural and Spiritual Values of Biodiversity*. London/Nairobi, Intermediate Technology Publications and UNEP.
- Psacharopoulos, G. & Patrinos, H.A.** 1994. *Indigenous people and poverty in Latin America: An empirical analysis*. World Bank, Washington, DC
- Rao, V. & Walton, M.,** eds. 2004. *Culture and public action*. Washington, DC, World Bank.
- Rappaport, J.** 2004. Between Sovereignty and Culture: Who is an Indigenous Intellectual in Colombia? *IRSH 49 Supplement*: 111–132.
- Rass, N.** 2006. *Policies and Strategies to address the Vulnerability of Pastoralists in Sub-Saharan Africa*. Pro-Poor Livestock Policy Initiative, Working Paper 37. FAO, Rome.
- Receveur, O. & Kuhnlein, H. V.** 1998. Benefits of traditional food in Dene/Metis communities. Proceedings of the X Congress of International Union on Circumpolar Health. *International Journal of Circumpolar Health* **57**, Suppl. 1: 219-222.
- Receveur, O., Boulay, M. & Kuhnlein, H.V.** 1997. Decreasing traditional food use affects diet quality for adult Dene/Métis in 16 communities of the Canadian Northwest Territories. *Journal of Nutrition* **127**: 2179-2186.
- Reyes-García, V., Vadez, V., Tanner, S., McDade, T., Huanca, T. & Leonard, W.R.** 2006. Evaluating Indices of traditional ecological knowledge: A methodological contribution. *Journal of Ethnobiology and Ethnomedicine* **2**(21): 1-9.
- Reyhner, J.** 2001. Cultural Survival vs. Forced Assimilation: the renewed war on diversity. *Cultural Survival Quarterly* **25**(2).
- Riddell, J. C.** 2000. *Emerging trends in land tenure reform: Progress towards a unified theory*. Land Tenure Service. Rome, FAO.
- Salehi, M., Kuhnlein, H.V., Shahbazi, M., Kimiagar, S.M., Kolahi, A.A. & Mehrabi, Y.** 2005. Effect of traditional food on nutrition improvement of Iranian tribeswomen. *Ecology of Food and Nutrition* **44**(1):81-95.
- SBSTTA** 2003. Report of the Ad Hoc Technical Expert Group Meeting on the Potential Impacts of Genetic Use Restriction Technologies on Smallholder Farmers, Indigenous and Local Communities and Farmers' Rights. Subsidiary Body for the Scientific, Technological and Technical Advice. New York, Secretariat of the Convention on Biological Diversity.
- Shepherd, C. J.** 2004. Agricultural Development NGOs, Anthropology and the Encounter with Cultural Knowledge. *Culture and Agriculture* **27**(1): 35-44.
- Shiva, V., Anderson, P., Schücking, H., Gray, A., Lohmann, L. & Cooper, D.** 1995. *Biodiversity. Social & Ecological Perspectives*. London and New Jersey, Zed Books.

Stavenhagen, R. 2000. Culture and Poverty. In UNESCO, *Cultural Diversity, Conflict and Pluralism*. Paris, UNESCO.

Stavenhagen, R. 2004. *Indigenous Peoples and Cultural Diversity. A Conceptual Outline and Proposals*. Paris, UNESCO (available at www.portal.unesco.org/culture/en).

Stavenhagen, R. 2007. Oral statement by Mr. Rodolfo Stavenhagen, Special Rapporteur on the situation of human rights and fundamental freedoms of indigenous people. UN Permanent Forum on Indigenous Issues, Sixth session, 14-25 May 2007, 6th Item on the Agenda: Half-day discussion on Asia. New York.

Stephens, C., Porter, J., Nettleton, C. & Willis, R. 2006. Disappearing, displaced, and undervalued: a call to action for Indigenous health worldwide. *The Lancet* 367: 2019-2028.

Stepp, J.R., Cervone, S., Casteneda, H., Lasseter, A., Stocks, G. & Gichon, Y. 2004. Development of a GIS for global biocultural diversity. In G. Borrini-Feyerabend, G.K. MacDonald & L. Maffi, eds. *History, Culture and Conservation*. Special Issue, Policy Matters 13: 267-270.

Suminguit, V.J. 2005. *Indigenous Knowledge Systems and Intellectual Property Rights: an Enabling Tool for Development with Identity*. Paper presented at the Workshop on Traditional Knowledge, the United Nations and Indigenous Peoples, 21-23 September, Panama City.

Tauli-Corpuz, V. 2005. *Indigenous Peoples and the Millennium Development Goals*. New York, UN Permanent Forum on Indigenous Issues.

Tauli-Corpuz, V. & Tamang, P. 2007. *Oil Palm and Other Commercial Tree Plantations, Monocropping: Impacts on Indigenous Peoples' Land Tenure and Resource Management Systems and Livelihoods*. Paper presented at the UN Permanent Forum on Indigenous Issues, Sixth session, 14-25 May 2007. New York.

Tchoumba, B. 2005. *Indigenous and Tribal Peoples and Poverty Reduction Strategies in Cameroon*. International Labour Organization (ILO) and Centre for Environment and Development (CED).

Tebtebba Foundation. 2002. The Myth of Sustainable and Responsible Mining. *Indigenous Perspectives* V(1).

Thomasson, G. C. 2001. Liberia's Seeds of Knowledge. *Culture Survival Quarterly* 15(3).

Thrupp, L.A. 1998 *Cultivating Diversity*. Washington, DC, World Resources Institute.

Thrupp, L. A. 2000. Linking Agricultural Biodiversity and Food Security: The Valuable Role of Sustainable Agriculture. *International Affairs (Royal Institute of International Affairs 1944-)* 76 (2 Special Biodiversity Issue): 265-281.

Trosper, R. L. 2003. Resilience in Pre-Contact Pacific Northwest Social Ecological Systems. *Ecology and Society* 7(3).

Tucker, C. M. 2004. Land Tenure Systems, and Indigenous Intellectual Property Rights. *Indigenous Intellectual Property Rights*. Walnut Creek, California, AltaMira Press: 127-151.

- United Nations.** 1948. *Universal Declaration on Human Rights*. New York.
- United Nations.** 1966. *International Covenant on Civil and Political Rights*. New York.
- United Nations.** 1966. *International Covenant on Economic, Social and Cultural Rights*. New York.
- United Nations.** 1993. *Vienna Declaration and Programme of Action*. World Conference on Human Rights, 14-25 June, Vienna.
- United Nations.** 2007. *World Population Prospects: The 2006 Revision and World Urbanization Prospects: The 2005 Revision*. New York, Population Division, UN Department of Economic and Social Affairs (also available at www.esa.un.org/unpp).
- United Nations.** 2007. *Declaration on the Rights of Indigenous Peoples*. New York.
- UNDP.** 2004. *Human Development Report 2004. Cultural liberty in today's diverse world*. New York, United Nations Development Programme.
- UNESCO.** 2000. *Cultural Diversity, Conflict and Pluralism. WORLD 2000*. Paris.
- UNESCO.** 2003. Convention for the Safeguarding of the Intangible Cultural Heritage. Paris.
- UNFPA.** 2007. *State of World Population 2007. Unleashing the potential of urban growth*. New York.
- United Nations University.** 2005. Establishing a UNU initiative on traditional knowledge. United Nations University, Institute for Advanced Studies.
- UNPFII.** 2004. *Agents of Change*. Permanent Forum on Indigenous Issues, Third Session, 10-21 May 2004. Background. New York.
- UNPFII.** 2005a. *Indigenous Peoples and the Millennium Development Goals*. Note by the Secretariat. Permanent Forum on Indigenous Issues, Fourth Session, 16-27 May 2005, E/C.19/2005/4/Add.13. New York.
- UNPFII.** 2005b. Report of the International Workshop on Traditional Knowledge, 21-23 September, Panama City. New York, Permanent Forum on Indigenous Issues.
- UNPFII.** 2006. Report of the Meeting on Indigenous Peoples and Indicators of Well-Being. 22-23 March, Ottawa. New York, Permanent Forum on Indigenous Issues.
- UNPFII.** 2007a. Sixth Session, Permanent Forum on Indigenous Issues. Indigenous Peoples – Lands, Territories and Natural Resources, 25 May 2007. Press release. New York.
- UNPFII.** 2007b. Sixth Session, Permanent Forum on Indigenous Issues. Indigenous Peoples – Lands, Territories and Natural Resources, 14-25 May 2007. Background. New York.
- Uphoff, N.T.** 1986. *Local institutional development: An analytical sourcebook with cases*. West Hartford, Ct., Kumarian Press.

Vadez, V., Reyes-García, V., Godoy, R.A., Apaza, V.L., Byron, E., Huanca, T., Leonard, W.R., Pérez, E. & Wilkie, D. 2004. Does integration to the market threaten agricultural diversity? Panel and cross-sectional data from a horticultural-foraging society in the Bolivian Amazon. *Human Ecology* 32(5): 635-646.

Valdez, N. 1998. *Ethnicity, class, and the indigenous struggle for land in Guerrero, Mexico*. New York, Garland Publications.

Verma, R. 2007. “*We Are the Land, and the Land Is Us*”: *The Complexities of Land Tenure and Struggles for Pastoralist Livelihoods in Kenya*. SARD Initiative, FAO. Rome.

Vicente, B., Eyzaguirre, P. & Johns, T. (in press, 2008). The nutritional role of forest foods for rural communities. In C. Colfer, ed. *Human Health and Forests: A Global Interdisciplinary Overview*. London, Earthscan.

Villarreal, M. 2000. *Culture, agriculture and rural development: a view from FAO's Population Programme Service* (available at www.fao.org).

Warren, P. 2003. *Farming, Ruralness and National Cultures in post-colonial societies. A comparative analysis of the ROA Project's culture module findings*. Rome, FAO.

Woolcock, M. 2001. *Social Capital: The Bonds that Connect*. Manila, Asian Development Bank.

World Bank. 2001. *Social Development*. Powerpoint presentation for the Seminar on Beyond the Last Decade: Indigenous Movements and the Transformation of Development and Democracy in Latin America. Princeton University.

The World Rainforest Movement. 1992. Charter of the Indigenous-Tribal Peoples of the Tropical Forests. Penang, Malaysia.

Zarger, R.K. & Stepp, J.R. 2004. Persistence of botanical knowledge among Tzeltal Maya children. *Current Anthropology* 45(3): 413-18.

Zent, S. 2001. Acculturation and ethnobotanical knowledge loss among the Piaroa of Venezuela: Demonstration of a quantitative method for the empirical study of TEK change. In L. Maffi, ed. *On Biocultural Diversity: Linking Language, Knowledge, and the Environment*. Washington, DC, Smithsonian Institution Press.

Zent, S. & Lopez-Zent, E. (in press). On Biocultural Diversity from a Venezuelan Perspective: Tracing the interrelationships among biodiversity, culture change, and legal reforms. In C. McManis, ed. *Biodiversity, Biotechnology and the Legal Protection of Traditional Knowledge*. Cambridge, UK, Cambridge University Press (also available at www.law.wustl.edu/centeris/Confpapers/PDFWrdDoc/ZentManuscript.html)

Zerner, C., ed. 2000. *People, Plants and Justice. The Politics of Nature Conservation*. New York, Columbia University Press.

Appendix 1. Glossary of Terms

Access and Benefit Sharing (ABS) is the fair and equitable sharing of benefits arising from use of genetic resources

Agro-ecological system - a land use system defined through the co-evolution of human culture and ecosystems, such that both influence the land that is used for crops, pasture, and livestock, the adjacent uncultivated land that supports other vegetation and wildlife, and the associated atmosphere, the underlying soils, groundwater, and drainage networks.

Culture is a complex system of beliefs, values, language, knowledge and practices, as well as the material and non-material products of human thought and action. Through social transmission and over time, all human societies develop a cultural system specific to the social and ecological context which identifies its bearers as a “cultural group” or a “culture”. It is a complex concept and as a result there are difficulties involved in precisely defining “a culture”, and thus in enumerating individual cultures (Maffi, 2001). Culture is also viewed as a set of institutions, practices, behaviours, technologies, skills, knowledge, beliefs and values proper to a human community. Culture is usually received, lived, refined, and reproduced at any given moment in history (Borrini-Feyerabend *et al.*, 2004). Cultures are highly dynamic constructs that change through time and hybridize when exposed to contact and exchange with other cultures (Balandier, 1971, Amselle, 1990 cited by Warren, 2003).

Food security is a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (FAO, 2002).

Food sovereignty is the right of Peoples to define their own policies and strategies for the sustainable production, distribution, and consumption of food, with respect for their own cultures and their own systems of managing natural resources and rural areas, and is considered to be a precondition for Food Security (The Atitlán Declaration on Food Sovereignty). It is the right of Indigenous Peoples to define their own food and agriculture, to protect and regulate domestic agricultural production and trade in order to achieve sustainable development objectives. For more discussion see Shiva *et al.* (1995) and Via Campesina (http://www.viacampesina.org/main_en/index.php?option=com_content&task=view&id=180&Itemid=27).

Indigenous – people are considered indigenous either because they are descendants of those who lived in the area before colonization, or because they have maintained their own social, economic, cultural and political institutions since colonization and the establishment of new states (ILO Convention No. 169). Self identification is crucial.

Poverty - There are a variety of ways to define poverty, each with their own strengths and deficiencies. Development agencies often employ quantitative measures of poverty, such as those setting a threshold of one or two dollars a day. Specific indicators relating to certain economic and social factors (such as infant mortality and literacy rates) are also employed. But many aspects of poverty, some of which are crucial to a human rights analysis, are not reflected in the statistical indicators. Poverty is a human condition characterized by the sustained or chronic deprivation of the resources, capabilities, choices, security and power necessary for the enjoyment

of an adequate standard of living and other civil, cultural, economic, political and social rights. In the most comprehensive and rights-sensitive definition of poverty to date, the United Nations Committee on Economic, Social and Cultural Rights, in its statement on poverty, defined poverty as "a human condition characterized by the sustained or chronic deprivation of the resources, capabilities, choices, security and power necessary for the enjoyment of an adequate standard of living and other civil, cultural, economic, political and social rights." ([E/C.12/2001/10](#)) (OHCHR website <http://www.unhcr.ch/development/poverty-02.html>)

Rights-based indicators – indicators that are relevant to indigenous and tribal peoples that take into account processes of full, active and meaningful participation of indigenous and tribal communities at all stages of data collection as well as indicators that are of particular significance to Indigenous Peoples. These include access to territories (land and waters), access to resources, and participation in decision-making, as well as issues of discrimination or exclusion in the areas of economic, social and cultural rights. Rights based indicators to be used for data collection and disaggregation on Indigenous Peoples should reflect the current status of the realization of their human rights, be useful in policy articulation and prescription and should measure both the process and the outcome of development activities. They should be able to measure dimensions of the process of the realization of human rights, such as participation, non-discrimination, empowerment and accountability (Tauli-Corpez, 2005).

Self-determination is the exercise of the right of a people to freely determine its social, economic, political and cultural future without external influence (DeLaCruz, 1989 cited by Elford, 2000). Central to the struggle for self-determination is the legal recognition of these rights to land and resources⁵³ (IWGIA, 1994).

Tenure is the relationship, whether legally or customarily defined among people as individuals or groups, with respect to land and associated natural resources. Rules of tenure define how resources are to be allocated within societies. Land tenure systems determine who can use what resources for how long, and under what conditions." (FAO Multilingual Thesaurus on Land Tenure)

Traditional food systems – a term understood to mean food that is procured either as wild or cultivated over several generations and modified to suit local needs. It also refers to cultural practices that are specific to the procurement of that food

Traditional knowledge: implied in the use of the word ‘traditional’ is how knowledge is acquired and used, referring to the social processes of learning and sharing knowledge. The knowledge may be new, but it has a social meaning and legal character (Four Directions Council, 1996).

⁵³ Indigenous Peoples’ rights are grounded in the right to cultural integrity, which is a fundamental right enshrined in a range of international instruments. The right of “all peoples” to self-determination, as defined in common Article 1 of the international human rights covenants adopted by the United Nations in 1966. The United Nations Human Rights Committee (HRC) applies this right to Indigenous Peoples when examining state-party reports under Article 40 of the 1966 International Covenant on Civil and Political Rights (ICCPR). This right is also applied to Indigenous Peoples in the UN Declaration on the Rights of Indigenous Peoples.

Well-being: A context- and situation-dependent state, comprising basic material for a good life, freedom and choice, health and bodily well-being, good social relations, security, peace of mind and spiritual experience.

Appendix table 1 Cultural indicator areas suggested for measuring the state and trends in Indigenous Peoples Food and Agro-ecological Systems, Rights to Food, Food Security and Sustainable Agriculture and Rural Development. Ten main Indicator areas (in bold capitals) are listed with suggested sub-groupings (in italics) and suggested indicators for each area with the sources of the indicators.

Suggested Indicator	Source
1. ACCESS TO AND INTEGRITY OF TRADITIONAL LANDS, WATERS AND HABITAT USED FOR FOOD PRODUCTION, HARVESTING AND/OR GATHERING	
<i>Security of tenure: physical property rights</i>	
1. Recognition of indigenous governance and customary laws by state governments	UNPFII 5 Indicators (2006)
2. Existence of legal frameworks for indigenous veto over the use of indigenous lands	
3. Prevalence of land disputes	FAO
4. Recognition/existence/continuation of traditional land tenure (including common property regimes) of indigenous and local communities (territories may include fresh and marine waters (e.g. sea and sea-bed tenure)	The Advisory Group to Article 8 (j) CBD
5. Traditional lands and waters managed or co-managed by indigenous and local communities such as co-managed protected areas (where indigenous and local communities may be able to exercise traditional ecological knowledge on managing lands and waters traditionally occupied by them)	
6. Proportion of Population with secure access to land and to traditional resource rights	
7. Loss of traditional lands and waters	
8. Enforced protection of lands from illegal encroachment	Suggested Indicators for exploration
9. Extent of privatization	
10. Government expropriation, forced resettlement	
<i>Agricultural changes and gender</i>	
11. Change in women's decision making capacity at household level;	IFAD
12. Change in women's participation in decision making at project/local level.	
13. Proportion of female-headed households/other vulnerable groups with legal title to agriculture land	HRI/MC 11 May 2006
14. Changes in women's traditional resource access rights	Suggested indicator for exploration

Suggested Indicator	Source
2. ABUNDANCE, SCARCITY AND/OR THREATS TO TRADITIONAL SEEDS, PLANT MEDICINES AND FOOD ANIMALS	
<i>Local Knowledge of Bio and Agrobiodiversity</i>	
1. Number of government/local policies/programs to transmit/learn indigenous ecological and agro-ecological knowledge	UNPFII 5 Indicators (2006); The Advisory Group to Article 8 (j) CBD; United Nations University (2005)
2. Percent of Indigenous Peoples that participate in traditional vs. non-traditional economic activities	UNPFII 5 Indicators (2006)
3. Status and trends of linguistic diversity and numbers of speakers of indigenous languages (as a proxy for traditional knowledge) (nb: Other indicators of the status of indigenous and traditional knowledge are being developed).	CBD 2010 Biodiversity Indicators Partnership Project
4. Traditional knowledge associated with species 5. Distribution of knowledge about a species across different sectors of the community and transmitted across generations	Conservation and Sustainable Use of Agricultural Biodiversity: A Sourcebook (CIP-UPWARD 2003)
6. Knowledge of hunting and fishing techniques	Tchoumba 2005
7. Total number of different species used in the household/unit time 8. Self-reported number of plant-made items that people report knowing how to make	Reyes-García et al (2006)
9. Education systems that encourage use of local ecological knowledge	Suggested indicator for exploration
<i>Introduced and Genetically Modified Seeds</i>	
10. Yield of traditional crops and yield of introduced or GMO crops 11. Consumption of traditional vs. introduced crops 12. Prices of traditional vs. introduced crops	IFAD
13. Number of different traditional cultivars of species preferred for distinct uses	CIP-UPWARD (2003)
<i>Habitat Loss through Land Conversion (i.e. monocultures) and Environmental Degradation</i>	
14. Number of endangered flora and fauna linked to Indigenous Peoples' current and future subsistence needs, and dependence based upon ceremonial and cultural practices 15. Number of fish, animals and other life-forms that can be sustainably hunted, fished and gathered on lands and territories 16. Threats to viability of resources (climate change, contaminate levels, habitat	UNPFII 5 Indicators (2006)

Suggested Indicator	Source
<p>destruction/conversion)</p> <p>17. Level/sources of protection of traditional habitat</p> <p>18. Indigenous Peoples' inclusion, participation and employment in ecosystem management</p> <p>19. Number of preventive programs, regulations, ordinances and measures protecting Indigenous lands from extractive activities and other non-sustainable activities</p> <p>20. Number of environmental protection violations and reports of conservation damage within and near Indigenous lands and territories</p>	
<p>21. Extent of changing Land-use patterns (i.e. territories where traditional land use has changed to other uses i.e. forest clearance to agriculture; could possibly be measured by the Global Information Satellite systems (GIS)</p>	<p>The Advisory Group to Article 8 (j) CBD; ECLAC Indicator Worksheet 4</p>
<p>22. Intensity of fertilizer, insecticide and/or herbicide use by area of agriculture land</p>	<p>ECLAC Indicator Worksheet 4</p>
<i>Market Expansion</i>	
<p>23. Percent of Indigenous Peoples that participate in modern/non-traditional economic activities</p> <p>24. Percent of Indigenous community economy generated through traditional subsistence activities</p>	<p>UNPFII 5 Indicators</p>
<p>25. Capacity (i.e, access to markets) to sell local products</p>	<p>IFAD; Tchoumba (2005)</p>
<p>26. Use of traditional exchange and reciprocity systems</p>	<p>Suggested indicator for exploration</p>
3. CHANGES IN THE USE OF TRADITIONAL FOODS AND MEDICINES (AND ASSOCIATED CEREMONIAL USES)	
<p>1. Change in production and consumption of staples</p> <p>2. Change in number of species used for medicines and frequency of use</p> <p>3. Change in number of species used as food and frequency of use</p>	<p>IFAD</p>
4. EXTENT OF CONTINUED PRACTICE/USE OF CEREMONIES, DANCES, PRAYERS, SONGS AND OTHER ORAL TRADITIONS RELATED TO THE USE OF TRADITIONAL FOODS AND SUBSISTENCE PRACTICES	
<p>1. Degree to which people are engaged in traditional practices: participation in and knowledge of traditional spiritual ceremonies related to food</p>	<p>Registered Indian HDI; CIP-UPWARD 2003; Working Group on Article 8j. CBD; Maputo Task Force, Laaksonen et al (2005)</p>
<p>2. The existence of totems (indicating totemic diversity)</p>	<p>Advisory Group to Article 8 (j) CBD</p>

Suggested Indicator	Source
3. Religious and folk festivals	UNESCO (2000)
4. Societal respect for basic human freedoms of belief, thought and expression 5. Societal encouragement for innovative expression	Cultural Freedom and Creative Empowerment Indices (UNRISD)
5. PRESERVATION AND CONTINUED USE OF LANGUAGE, SONGS, STORIES AND CEREMONIES, TRADITIONAL NAMES FOR FOODS AND AGRO ECOLOGICAL PROCESSES	
1. Number of speakers of mother tongue (indigenous languages)	CBD 2010 Indicators; UNESCO (2000)
2. Development of community media in local languages 3. Officialisation of indigenous national languages	The Maputo Task Force, Laaksonen et al (2005)
4. Percent of children learning indigenous languages	UNPFII 5 (2006)
5. Extent to which indigenous language is used for naming species and ecosystem features 6. Extent to which indigenous language forms the basis of songs and stories, frequency of use and means of transmission of songs and stories	Suggested indicators for exploration
6. THE USE OF SACRED SITES FOR ASSOCIATED CEREMONIAL PURPOSES	
1. Recognition of sacred sites by local communities, governments, development industries	The Maputo Task Force Laaksonen (2005)
2. Level of access/activity (wood gathering, cultivation, etc) in sacred forests 3. Biodiversity in sacred forests	Suggested indicators for exploration
7. RATE OF RURAL TO URBAN MIGRATION AND IMPACT ON TRADITIONAL FOOD SYSTEMS	
1. Demographics and statistics on the urbanization and movement/s of indigenous and local communities away from traditional territories.	The Advisory Group to Article 8 (j) CBD; UNPFII 5 (2006)
2. Number of households that report income from sources outside the community 3. Household income and use of non-traditional, purchased foods 4. Gender ratio in households and level of agricultural workload on women 5. Level of traditional ecological and agro-ecological knowledge of returned migrant workers 6. Migrant investments in maintenance of the natural resource base for food	Suggested indicators for exploration

Suggested Indicator	Source
production and collection	
8. NUMBER AND EFFECTIVENESS OF CONSULTATIONS FOR PLANNING, IMPLEMENTATION AND EVALUATION; USE OF THE PRINCIPLE OF FREE, PRIOR INFORMED CONSENT (PIC) AND THE EXTENT TO WHICH CULTURAL CONCERNS ARE CONSIDERED AND ADDRESSED	
<i>Intellectual Property Rights</i>	
1. Level of knowledge and awareness of IPR among community members	Suggested indicators for exploration
2. Protection mechanisms in place for traditional knowledge and innovation	
<i>Access and Benefit Sharing</i>	
3. Support for indigenous capacity, leadership, policy and program development by state and indigenous governance, including number of programs and persons participating in and completing trainings	UNPFII 5 (2006)
4. Participation in the creation of protected areas and management of forest concessions.	Tchoumba (2005)
5. Number of development programs that involve collaborative partnerships with participating community (co-management)	Suggested indicators for exploration
6. Number of development activities that include Free, Prior and Informed Consent	
7. Legislation to regulate access to genetic resources and benefit sharing	
9. INDIGENOUS INSTITUTIONS FOR KNOWLEDGE TRANSMISSION	
1. Existence of knowledge holders and the persistence of customary law	The Advisory Group to Article 8 (j) CBD; UNPFII 5 (2006)
2. The establishment and effective implementation of local/government policies/programmes for traditional knowledge retention, use and intergenerational transfer and their effective implementation (see area 1)	
3. Level of involvement of youth and elders in community decision-making	Registered Indian HDI
4. Legal framework for local level institutions	Suggested indicators for exploration
5. Extent of use of traditional ecological and agro-ecological knowledge in formal institutions at higher scales	
10. RESILIENCE	

Suggested Indicator	Source
<ol style="list-style-type: none"> 1. The extent of acquired local knowledge of the relationship between changing ecological conditions and the impact on traditional foods and agro-ecological system; 2. Locally developed food production and procurement strategies for adapting to changing ecological conditions 3. Labor availability and market prices 	Suggested indicators for exploration

Appendix table 2: Indicator areas developed at the 2nd Global Consultation on the Right to Food and Food Security for Indigenous Peoples: Cultural Indicators for Food Security, Food Sovereignty and Sustainable Development

1. ACCESS TO, SECURITY FOR AND INTEGRITY OF LANDS, TERRITORIES AND NATURAL RESOURCES FOR TRADITIONAL FOOD PRODUCTION, HARVESTING AND/OR GATHERING		
Structural Indicator Areas	Process Indicator Areas	Results Indicator Areas
1. Number of policies, programs, legislative and administrative measures (national, state, local/tribal and/or international) in place for the management, protection and conservation of lands, territories and subsistence resources used traditionally by Indigenous Peoples	1. Number of policies, programs, legislative and administrative measures (national, state, local/tribal and/or international) being effectively implemented for the management, protection and conservation of lands, territories and subsistence resources used traditionally by Indigenous Peoples.	1. Percentage of lands, territories and subsistence resources used traditionally by Indigenous Peoples for subsistence and food production to which IPs still have full access.
2. Number of national constitutional provisions, laws, policies and programs which support of Indigenous Peoples' access to and legal recognition of lands, territories, and natural resources which they have traditionally owned, occupied or otherwise used for subsistence and food production and practices.	2. Number of programs in place or under development to demarcate Indigenous Peoples' traditional lands, territories and/or subsistence use areas.	2. Percentage of Indigenous Peoples' lands and territories that are legally demarcated, recognized, owned and/or controlled by them today as compared to benchmarks established in past (i.e.lands recognized in Treaties and agreements, original/traditional use areas.)
3. Number of policies, programs, legislative and administrative measures in place (National, state, local/tribal and/or international) which restrict or limit Indigenous Peoples' use of and access to lands, territories and subsistence resources used traditionally.	3. Number of court cases or legal challenges to measures, policies or programs which restrict or limit Indigenous Peoples' use of and access to lands, territories and subsistence resources used traditionally.	3. Percentage of lands, territories and natural resources used traditionally for food production (farming, fishing, hunting, gathering, herding) currently being used by Indigenous Peoples compared to benchmarks established in the past (5, 10, or 20 years etc)
4. Number of laws, instruments, Treaties and ordinances in place which respect and uphold Indigenous Peoples' right to use, protect, control own and/or develop traditional subsistence food resources (plants, animals, seeds, genetic resources, etc) and prevent the misappropriation of Indigenous Peoples' collective bio-cultural heritage.	4. Degree of enforcement and compliance with Laws, Constitutions, Treaties, Agreements, Constructive Arrangements, ordinances and other Policies upholding and defending Indigenous Peoples' right to use, protect, control own and/or develop traditional subsistence food resources (plants, animals, seeds, genetic resources etc) and prevent the misappropriation of Indigenous Peoples' collective bio-cultural heritage.	4. Percentage of traditional use lands, territories, and subsistence use areas which have retained their productive capacity for farming/fishing/hunting/gathering/herding); Percentage which are now damaged, diminished, contaminated, etc.

5. Number of mechanisms in place with agreement of Indigenous Peoples for resolving conflicts regarding lands, territories and resources used traditionally for subsistence and food production by Indigenous Peoples.	5. Frequency of conflict over territory and natural resources, number of court cases and disputes filed.	5. Percentage of conflicts settled in favor of Indigenous Peoples.
2. ABUNDANCE, SCARCITY AND/OR THREATS TO TRADITIONAL SEEDS, PLANT FOODS AND MEDICINES, AND FOOD ANIMALS, AS WELL AS CULTURAL PRACTICES ASSOCIATED WITH THEIR PROTECTION AND SURVIVAL		
Structural Indicator Areas	Process Indicator Areas	Results Indicator Areas
1. Number of traditional institutions or other mechanisms or programs in place for transmission of traditional knowledge about cultural practices related to food production, use, protection and/or abundance.	1. Number of investigations and studies re: abundance and health of traditional subsistence foods being carried out by Indigenous Peoples’.	1. Percentage of traditional knowledge and cultural practices associated with the use, production, protection and abundance of traditional food sources and resources still being used on a regular basis as compared to benchmarks from the past.
2. Number of programs and projects in place in communities for clean up of contaminated habitats; Percentage which are initiated/run/lead/evaluated by Indigenous community members.	2. Number of active programs in Indigenous communities to restore plant or animal food species and/or their habitats and measure the impacts on abundance since their implementation.	2. Percentage of traditional subsistence food resources (plant and animal) which are intact, viable, productive, healthy and free from contamination (toxics, GMO’s etc) compared to percentage of subsistence plants and animals that show signs of disease, toxic contamination, diminishing population and other effects.
3. Number of government, corporate, agency, NGO or other outside entity programmes in place for clean up and restoration of contaminated or impacted habitats.	3. Number of studies initiated by Indigenous communities and/or outside agencies to compare traditional food use levels with diet related disease levels, suicide rates and other physical, mental or social illness or factors.	3. Changes in monthly/yearly harvests of food plants and animals used traditionally and reasons for any decrease, changes and/or restrictions.
	4. Numbers of studies or assessments by Indigenous communities and others in conjunction with Indigenous Peoples to assess impacts of imposed development (dams, deforestation, urbanization, industrial agricultural, mining, drilling, etc.) on the traditional lands, territories and subsistence resources of Indigenous Peoples.	4. Number of traditional food plants and animals which have been declared endangered, have decreased in numbers, and/or have disappeared (suggested comparisons to 50 years and 10 years ago, as per reports of subsistence users as well as existing governmental, agency, organization studies); number considered to be currently under threat.
		5. Levels of introduced environmental contaminants (i.e. mercury, POPs, pesticides and other agro-chemicals, genetic contaminants etc.) present in

		traditional subsistence foods including breast milk.
3. CONSUMPTION AND PREPARATION OF TRADITIONAL PLANT AND ANIMAL FOODS AND MEDICINES, INCLUDING IN CEREMONIAL/CULTURAL USE AS WELL AS DAILY HOUSEHOLD USE		
Structural Indicator Areas	Process Indicator Areas	Results Indicator Areas
	1. Number of programs in operation providing education to community members about health, nutritional benefits as well as cultural significance of traditional foods.	1. Percentage of households in a community that use traditional/ subsistence foods on a regular basis, compared to an agreed upon number of years in the past (5, 10 or 25 depending on community history); Percentage of household diet based on traditional foods (weekly, monthly and over a year) as compared to “introduced” foods (i.e. processed foods, imported foods, GMO’s etc.).
	2. Number of such programs initiated by groups/agencies from outside the community vs number which are community-initiated and community lead.	2. Percentage of community members and/or families which still participate in traditional subsistence activities (compared to 50 years ago, 10 years ago or another appropriate number of years to determine rates of increase or decrease).
		3. Percentage of foods and food related items used traditionally in ceremonies which are still in use today as compared to an agreed upon number of years in the past (5, 10 or 25 depending on community history).
4. CONTINUED PRACTICE AND USE OF CEREMONIES, DANCES, PRAYERS, SONGS AND STORIES AND OTHER CULTURAL TRADITIONS RELATED TO THE USE OF TRADITIONAL FOODS AND SUBSISTENCE PRACTICES		
Structural Indicator Areas	Process Indicator Areas	Results Indicator Areas
1. Number of traditional institutions/societies/leaders that initiate/take responsibility for traditional ceremonies and for religious activities related to or using traditional food (planting, harvesting, caretaking, gathering, hunting, fishing, preparation and serving).	1. Percentage of women, youth, men and elders that participate in the transfer of knowledge through traditional ceremonies and religious activities related to or using traditional food (planting, harvesting, caretaking, gathering, hunting, fishing, preparation and serving).	1. Number / Percentage of community members who participate in traditional ceremonies and cultural practices; percentage of those who are youth.
2. Number of contemporary institutions that provide for/support the continuation of these traditional ceremonies and		2. Number of traditional and cultural practices associated with the use, protection and abundance of traditional food sources and resources still being used on a regular basis (i.e. songs,

cultural activities.		ceremonies, stories, dances, clan relationships and other practices).
3. Number of traditional institutions in place to insure transmission of traditional knowledge about cultural/ceremonial practices specifically related to food production, use, protection and/or abundance, and the use of traditional foods in these practices.		3. Number or percentage of community members who actively participate in these cultural and practices.
5. PRESERVATION AND CONTINUED USE OF LANGUAGE AND TRADITIONAL NAMES FOR FOODS AND PROCESSES (PLANTING, HUNTING, GATHERING, HARVESTING, FISHING, FOOD PREPARATION ETC.)		
Structural Indicator Areas	Process Indicator Areas	Results Indicator Areas
1. Number of traditional institutions/societies/leaders that take responsibility for the continuation of the traditional language, songs stories, etc related to traditional food use (planting, harvesting, caretaking, gathering, hunting, fishing, preparation and serving).	1. Percentage of youth who actively participate in programs to learn the traditional language including names for traditional foods and food related practices.	1. Percentage of living community members who know the words, songs, dances, stories associated with traditional food gathering/production/caretaking preparation and use.
2. Number of contemporary institutions that provide for/support the continuation of the traditional language, songs stories, etc related to traditional food use.		2. Percentage of community members who are fluent speakers in the Indigenous language and percentage of households in which an Indigenous language is the primary spoken language, and increase or decrease compared to number of years in the past (i.e. 10 years or 25 years).
6. INTEGRITY OF AND ACCESS TO SACRED SITES FOR CEREMONIAL PURPOSES RELATED TO USE OF TRADITIONAL FOODS		
Structural Indicator Areas	Process Indicator Areas	Results Indicator Areas
1. Percentage of sites traditionally used for ceremonial, religious and related traditional subsistence activities currently under recognized Indigenous ownership, control, jurisdiction and /or protection.	1. Percentage of programs in place to return use/control/ownership/jurisdiction of these sites to Indigenous Peoples.	1. Percentage of total sites traditionally used for ceremonial, religious and related traditional subsistence activities within traditional lands and territories which are currently used on a regular basis compared to benchmarks established in the past (traditional use, Treaties, number of years ago, etc)
2. Percentage of these under other legal forms of protection		2. Percentage of total sites traditionally used for ceremonial, religious and

(i.e. federal/state) and/or as protected areas.		traditional subsistence activities within currently-recognized Indigenous territories which are now used on a regular basis.
3. Percentage of sites under state/federal protection and/or protected areas designation to which Indigenous Peoples have full access.		3. Percentage of these sites currently under threat of desecration/destruction/contamination etc.
4. Number of mechanisms in place with full participation and agreement of Indigenous Peoples for resolving conflicts regarding access to/control and use of/protection of sacred sites.		4. Percent of conflicts settled in favor of Indigenous Peoples.
7. MIGRATION AND MOVEMENT AWAY FROM TRADITIONAL LANDS AS A RESULT OF RURAL-TO-URBAN MIGRATION, CONFLICT, FORCED RELOCATION, LAND APPROPRIATION, CLIMATE CHANGE, AND ECONOMIC NECESSITY; RETURN PATTERNS AND RELATIONSHIPS TO CONTINUED USE OF TRADITIONAL FOODS		
Structural Indicator Areas	Process Indicator Areas	Results Indicator Areas
1. Number of laws/agreements in place providing for and enabling the free movement and return of traditionally mobile Peoples and for mobile subsistence practices (herding, fishing, hunting, gathering).	1. Number of laws enforced and implemented providing for the free movement and return of traditionally mobile Peoples and for mobile subsistence practices (herding, fishing, hunting, gathering).	1. Percentage of persons/youth that leave the community on a seasonal, semi-permanently (for at least 2 years) or permanently (5 years of more) for employment/economic or other reasons, including those which impact traditional subsistence access or resources.
2. Number of laws/agreements enabling cross border movement of Indigenous Peoples including access to traditional subsistence use areas.	2. Degree of enforcement of laws/agreements that exist to allow cross border mobility for subsistence, ceremonial and other related purposes.	2. Percentage of those who have returned to communities who use traditional food systems and ceremonial practices upon their return.
		3. Percentage of households, and percentage of youth, that retain or maintain traditional food use when away from their home communities.
8. EFFECTIVE CONSULTATIONS FOR PLANNING, IMPLEMENTATION AND EVALUATION APPLYING THE PRINCIPLES OF FREE, PRIOR INFORMED CONSENT AND FULL PARTICIPATION BY COMMUNITY MEMBERS WHEN DEVELOPMENT PROGRAMS ARE IMPLEMENTED BY STATES, OUTSIDE AGENCIES OR OTHER ENTITIES AND THE EXTENT TO WHICH CULTURAL CONCERNS ARE CONSIDERED AND ADDRESSED		
Structural Indicator Areas	Process Indicator Areas	Results Indicator Areas
1. Number of laws, legal systems and mechanisms in	1. Number of court cases and complaints related violations of Peoples' collective	1. Percent of court cases and complaints related to Intellectual Property

place, recognized and being implemented (traditional/ tribal/ state/national/ and international) for the recognition, protection and restoration of Indigenous Peoples' collective knowledge systems related to traditional foods and medicines (i.e. Intellectual Property Rights/Cultural Heritage rights) including the protection of genetic resources.	knowledge systems/Intellectual Property Rights filed by Indigenous Peoples (symbols, genetic resources, seeds and plants, including medicinal plants, etc).	Rights/Cultural heritage rights settled in favour of the Indigenous Peoples.
2. Number of Indigenous Peoples-initiated programs in place to validate, organize, protect and/or register their traditional knowledge systems and resist/oppose/prevent misappropriation of their collective bio-cultural heritage.	2. Number of consultations for program planning, implementation and evaluation with community members and representatives by states, outside agencies or other entities; Percentage of community members including elders/traditional subsistence practitioners/traditional food producers/knowledge holders/ users participating in these consultations.	2. Extent to which the definition, understanding and priorities for "Development" by the Indigenous Peoples affected is considered and reflected in relevant project planning, implementation and assessment, including preservation of traditional food systems and habitats, based on assessment of participating community members.
	3. Level of involvement of the affected local communities/community members in all studies and evaluations relating to traditional food production and use/subsistence resources and practices carried out in and near their lands and traditional use areas.	3. Extent to which development projects/proposals from outside the Indigenous communities respect and uphold the rights of Free Prior Informed Consent and Self-determination as defined and assessed by impacted community members including traditional subsistence producers/users.
	4. Level of participation in and control of programs and projects by the community members, including traditional subsistence and food producers, cultural leaders, and elders in the territories where they are being undertaken.	
9. EXISTENCE AND VIABILITY OF MECHANISMS AND INSTITUTIONS CREATED BY AND ACCESSIBLE TO INDIGENOUS PEOPLES FOR TRANSMISSION OF FOOD RELATED TRADITIONAL KNOWLEDGE AND PRACTICES TO FUTURE GENERATIONS		
Structural Indicator Areas	Process Indicator Areas	Results Indicator Areas
1. Number of public policies and mechanisms that hold government and other interests accountable and responsible to Indigenous Peoples' interests in this area.	1. Number of programmes and institutional mechanisms existing, led and controlled by indigenous communities (using new and/or traditional knowledge transmission methods) to record and transmit traditional knowledge about food and subsistence practices.	1. Number of youth, women, elders and other community members involved in and benefiting from these programmes.

<p>2. Number of government laws, programmes and policies in place and being implemented that support and recognize Indigenous Peoples' rights to maintain and transmit their traditional knowledge, and make decisions in that regard.</p>	<p>2. Level of community access to and availability of new technologies for knowledge documentation and transmission.</p>	<p>2. Number of Indigenous Peoples and/or institutions, including Indigenous youth, who use new communication Technologies and knowledge transmission methods to transmit and refer to Indigenous knowledge about traditional foods, threats to Indigenous Peoples' traditional foods and related cultural practices, and/or to organize support for and protection of traditional Indigenous food systems.</p>
<p>3. Extent to which Indigenous Peoples have control over local educational systems and schools, and utilize these systems to transmit knowledge related to traditional food production and use and related cultural practices.</p>		<p>3. Number or percent of Indigenous youth in a community/tribe/nation who perceive their traditional foods and subsistence practices as relevant in today's world (dynamic, vibrant, essential for success, cultural identity, health, survival).</p>

10. CAPACITY WITHIN INDIGENOUS COMMUNITIES AND PEOPLES FOR ADAPTABILITY, RESILIENCE, RESISTANCE AND/OR RESTORATION OF TRADITIONAL FOOD USE AND PRODUCTION IN RESPONSE TO CHANGING ECONOMIC, POLITICAL AND/ OR ENVIRONMENTAL CONDITIONS

Structural Indicator Areas	Process Indicator Areas	Results Indicator Areas
<p>1. Number of community run programs for the re-establishment of lost or threatened food sources, practices and/or knowledge, (including addressing adaptation to changing environmental, political, cultural and/or economic conditions).</p>	<p>1. Existence of and extent of participation in community-based discussions and decision-making regarding the need and/or desirability for adapting of traditional methods and food sources to changing conditions, including level of participation by elders, youth, cultural leaders, women and traditional practitioners.</p>	<p>1. Percent of Indigenous community members that continue to use and produce traditional foods in their territories while adapting to changing conditions (migration, environmental changes, etc.).</p>
	<p>2. Number of new culturally and environmentally sustainable technologies or methods in use or under development for food production or related activities (i.e. sustainable energy production, water purification, irrigation, natural pest control etc.) with the agreement and involvement of local practitioners.</p>	<p>2. Number of Indigenous food traditions and resources that have resisted, adapted, and/or have been reincorporated in new situations and places, (new locations and residences, intercultural marriages, in response to impacts of climate changes etc.) in ways that are consistent with Indigenous cultural integrity and well-being as defined by the practitioners.</p>
	<p>3. Number of studies or assessments carried out by or involving community</p>	<p>3. Number of different Indigenous-generated income-earning activities</p>

	members to assess impacts of new technologies and methods for food production/use on traditional cultural integrity, health, traditional food restoration capacities and other factors (either undermining or enhancing).	associated with traditional foods, agro-ecological and native food systems, knowledge and practices.
11. ABILITY OF INDIGENOUS PEOPLES TO UTILIZE AND IMPLEMENT RECOGNIZED RIGHTS, LEGAL NORMS AND STANDARDS AS WELL AS SELF-GOVERNMENT STRUCTURES TO PROMOTE AND DEFEND THEIR FOOD SOVEREIGNTY ON THE LOCAL/TRIBAL/COMMUNITY, NATIONAL AND INTERNATIONAL LEVELS		
Structural Indicator Areas	Process Indicator Areas	Results Indicator Areas
1. Existence/number of public policies, institutions, Treaties, agreements and laws which respect and support indigenous self-determination, autonomy and food sovereignty at all levels.	1. Number of public policies, institutions, Treaties, agreements and laws being effectively and actively implemented which respect and support Indigenous self-determination, autonomy and food sovereignty at all levels (local/tribal, national and international levels).	1. Number of Indigenous Peoples (individuals and communities) that know, implement, benefit from and have appropriated the right to food and food sovereignty in keeping with their diverse realities and self-determination.
2. Number of related government institutions with programmes and budgets (including national budgets) that are dedicated specifically/exclusively to Indigenous Peoples.	2. Number of programmes in Indigenous communities to inform and assist community members, leaders and practitioners to know their rights and available mechanisms/processes to assert these rights numbers of participants (general and also specific to women, youth and elders).	2. Number of Indigenous community members, including community leaders, who understand the relationship between rights to self determination/self government/ sovereignty/autonomy, food sovereignty/food security and community health and well being.
3. Number and effectiveness of mechanisms for prevention of and redress for denial of rights to food, food sovereignty and subsistence rights at all levels (tribal/local/state/national/International).	3. Number of legal cases/complaints filed by Indigenous Peoples to prevent and/or halt activities that threaten or undermine their food sovereignty; final outcomes of these cases /complaints (percentage decided for or against Indigenous Peoples' interests).	3. Number of Indigenous communities who practice food sovereignty through self-government structures and assertions of their rights using a variety of mechanisms.
4. Number of existing ordinances and laws passed by Indigenous Peoples' own governing bodies and leadership institutions related to protection of food sovereignty, food producing lands, territories and resources; number of national/state/provincial laws that support and/or undermine these tribal ordinances and laws.		

Appendix table 3: Consolidated indicators developed at the 2nd Global Consultation on the Right to Food and Food Security for Indigenous Peoples: Cultural Indicators for Food Security, Food Sovereignty and Sustainable Development

1. Access to, security for and integrity of lands, territories, natural resources, sacred sites and ceremonial areas used for traditional food production, harvesting and/or gathering and related cultural and ceremonial purposes		
Structural Indicator Areas	Process Indicator Areas	Results Indicator Areas
1. Number of constitutional provisions, policies, programs, legislative and administrative measures (national, state, local/tribal and/or international) in place for demarcation, legal recognition, management, protection and conservation of lands, territories, subsistence resources, ceremonial areas and sacred sites used traditionally by Indigenous Peoples.	1. Number of constitutional provisions, policies, programs, legislative and administrative measures (national, state, local/tribal and/or international) being effectively implemented for the demarcation, legal recognition management, protection and conservation of lands, territories, subsistence resources, sacred sites and ceremonial areas used traditionally by Indigenous Peoples.	1. Percentage of lands, territories subsistence resources, sacred sites and ceremonial areas used traditionally by Indigenous Peoples for subsistence and food production to which IPs still have full access and/or control, and are legally demarcated or otherwise recognized today as compared to benchmarks established in the past (i.e. lands recognized in treaties and agreements, original/traditional use areas).
2. Number of policies, programs, legislative, administrative measures and legal mechanisms in place (national, state, local/tribal and/or international) which restrict, limit, respect or uphold Indigenous Peoples' use of and access to lands, territories, subsistence resources, sacred sites and ceremonial areas used traditionally.	2. Number of court cases or legal challenges to measures, policies or programs which restrict or limit Indigenous Peoples' use of and access to lands, territories, subsistence resources, sacred sites and ceremonial areas used traditionally and percentage of conflicts settled in favor of Indigenous Peoples.	2. Percentage of lands, territories and subsistence resources used traditionally for food production (farming, fishing, hunting, gathering, herding) and related ceremonial uses currently being used by Indigenous Peoples compared to benchmarks established in the past (5, 10, or 20 years etc); Percentage which have retained their full productive capacity vs. percentage which are now damaged, diminished, contaminated, etc.
2. Abundance, scarcity and/or threats to traditional seeds, plant foods and medicines, and food animals, as well as cultural practices associated with their protection and survival		
Structural Indicator Areas	Process Indicator Areas	Results Indicator Areas
1. Number of programs and projects in place in communities for clean up and restoration of impacted habitats and/or restoration of plant or animal food species by government, corporate, agency, NGO or other outside entity programmes; number of such programmes which are initiated, run and/or evaluated by Indigenous community members	1. Number of investigations and studies on abundance and health of traditional subsistence foods based on changes in monthly/yearly harvests of food plants and animals used traditionally and reasons for any changes; number of programs/policies initiated as a result and percentage of those carried out by Indigenous Peoples and communities.	1. Percent of traditional cultural practices associated with the use, production, protection and abundance of traditional food sources and resources still being used on a regular basis as compared to benchmarks from the past.
2. Number of community-initiated and community lead programs or	2. Number of studies initiated by Indigenous communities and/or outside	2. Percentage of traditional subsistence food resources (plant and animal) and

other initiatives in operation to provide education about the current threats to subsistence practices and resources (environmental contamination, habitat destruction, loss of traditional knowledge and Indigenous language, misappropriation and misuse of biological resources, genetic modification, etc.)	agencies to compare access to traditional foods, abundance and/or scarcity with diet related diseases (diabetes, malnutrition, infant mortality, maternal health, obesity, suicide rates and other physical, mental or social illness or factors.)	habitats which are intact, viable, productive, healthy and free from contamination (toxics, GMO's etc) compared to percentage of subsistence plants and animals that show signs of disease, toxic contamination, diminishing population based on changes in monthly/yearly harvests and other affects.
3. Number of laws, ordinances and provisions in place to protect traditionally used subsistence plant and animals and their habitats from overuse, environmental destruction, misappropriation, contamination etc; Percentage that have been developed and are being implemented by and/or in conjunction with Indigenous Peoples.	3. Numbers of studies or assessments by Indigenous communities and others in conjunction with Indigenous Peoples to assess impacts of imposed development (dams, deforestation, urbanization, industrial agriculture, mining, drilling, etc.) and introduced environmental contaminants (i.e. mercury, POPs, pesticides and other agro-chemicals, genetic contaminants etc.) on traditional subsistence foods including breast milk.	3. Number of traditional food plants and animals which have been declared endangered, have decreased in numbers, and/or have disappeared (suggested comparisons to 50 years and 10 years ago, as per reports of subsistence users as well as existing governmental, agency and outside organization studies); number considered to be under current threat.
3. Use and transmission of methods, knowledge language, ceremonies, dances, prayers, oral histories, stories and songs related to traditional foods and subsistence practices, and the continued use of traditional foods in daily diet as well as in relevant cultural/ceremonial practices		
Structural Indicator Areas	Process Indicator Areas	Results Indicator Areas
1. Number of traditional institutions or other mechanisms or programs in place for transmitting traditional knowledge, languages and cultural practices related to food production, use, protection, preparation and/or abundance.	1. Number of youth, women, elders and other community members involved in and benefiting from these programs to record and transmit traditional knowledge about food and subsistence practices.	1. Percentage of community households which use traditional/ subsistence foods as a regular part of their diet, compared to an agreed upon number of years in the past (5, 10 or 25 depending on community history); Percentage of total household diets based on traditional foods (weekly, monthly and over a year) as compared to "introduced" foods (i.e. processed foods, imported foods, GMO's etc.)
2. Number of programs and institutional mechanisms existing, led and controlled by indigenous communities (using new and/or traditional knowledge transmission methods) to record and transmit traditional knowledge about traditional food production and subsistence activities and related cultural knowledge and practices.	2. Number of community-initiated and community lead programs or other initiatives in operation to provide education about the nutritional value, health benefits and cultural significance of traditional foods, and culturally relevant and environmentally sustainable food production methods; number of such programs in operation initiated by groups/agencies from outside the community.	2. Percentage of community members who know traditional methods for food gathering/production/preparation including the traditional language, songs, dances, stories and ceremonies associated with these practices traditional; Percentage of community members which participate in and use these practices and percentage of those who are youth.
3. Number of government laws,	3. Number or percent of indigenous	3. Percentage of foods and food related

<p>programs and policies in place and being implemented that support and recognize Indigenous Peoples' rights to maintain, protect and transmit their traditional knowledge, control their educational systems and make other decisions in that regard.</p>	<p>youth in a community/tribe/nation who perceive or express that their traditional foods and subsistence practices as relevant in today's world (dynamic, vibrant, essential for success, cultural identity, health, survival).</p>	<p>items used traditionally in ceremonies which are still in use today as compared to an agreed upon number of years in the past (5, 10 or 25, depending on community history).</p>
<p>4. Capacity by Indigenous Peoples for adaptability, resilience, and/or restoration of traditional food use and production in response to changing conditions including migration, displacement, urbanization and environmental changes</p>		
Structural Indicator Areas	Process Indicator Areas	Results Indicator Areas
<p>1. Number of community run programs for reestablishment of lost or threatened food sources, practices and/or knowledge (including adaptation to changing environmental, political, cultural and/or economic conditions).</p>	<p>1. Existence of and extent of participation in community-based discussions and decision-making regarding the need and/or desirability for adapting traditional methods and food sources to changing conditions, including level of participation by elders, youth, cultural leaders, women and traditional practitioners.</p>	<p>1. Percent of Indigenous community members that continue to use and produce traditional foods in their territories while adapting to changing conditions (migration, environmental changes, etc.).</p>
<p>2. Number of laws/agreements in place providing for and enabling the free movement and return of traditionally mobile Peoples and for mobile subsistence practices (herding, fishing, hunting, gathering) including across international borders.</p>	<p>2. Number of new culturally and environmentally sustainable technologies or methods in use or under development for food production or related activities (i.e. sustainable energy production, water purification, irrigation, natural pest control etc.) with the agreement and involvement of local practitioners and number of studies or assessments carried out by or involving community members to assess impacts of these new technologies and methods.</p>	<p>2. Percentage of persons/youth that leave the community on a seasonal, semi-permanent (for at least 2 years) or permanent (5 years of more) basis for employment/economic/subsistence or other reasons; of those who return to the communities, what percentage go back to using traditional food systems and related ceremonial/cultural practices.</p>
	<p>3. Number of Indigenous Peoples and/or institutions, including indigenous youth, who use new communication technologies and knowledge transmission methods to transmit and refer to indigenous knowledge about traditional foods, threats to Indigenous Peoples' traditional foods and related cultural practices, and/or to organize support for and protection of traditional indigenous food systems.</p>	<p>3. Number of indigenous food traditions and resources that have resisted, adapted, and/or has been re-incorporated into new situations and places, (new locations and residences, intercultural marriages, responding to impacts of climate changes, adapted as income-earning activities, etc.) in ways that are consistent with indigenous dignity and well-being as defined by the practitioners.</p>

5. Ability of Indigenous Peoples to exercise and implement their rights including self-determination and free prior informed consent, as well as their self-government structures, to promote and defend their Food Sovereignty and related aspects of their development

Structural Indicator Areas	Process Indicator Areas	Results Indicator Areas
<p>1. Number of laws, legal systems and mechanisms in place and being implemented (traditional/ tribal/ state/national/ and international) for the recognition, protection, control, ownership, restoration and/or redress of violations of Indigenous Peoples' collective knowledge systems and bio-cultural heritage, and other aspects of their right to food and food sovereignty.</p>	<p>1. Number of court cases and complaints filed to prevent and/or redress violations of Indigenous Peoples' rights to their collective knowledge systems and bio-cultural heritage (symbols, genetic resources, seeds and plants, including medicinal plants, etc.), to halt proposed non-sustainable development projects or to otherwise defend their food sovereignty; percent of those settled in favour of Indigenous Peoples.</p>	<p>Number of Indigenous communities who practice food sovereignty through self-government structures and assertions of their rights using a variety of mechanisms.</p>
<p>2. Number of public policies, institutions, treaties, agreements and laws in existence which respect and support Indigenous Peoples' rights to self-determination, free prior informed consent, autonomy, food sovereignty and right to subsistence at all levels; number/percent being effectively implemented and number being violated .</p>	<p>2. Number of consultations for program planning, implementation and evaluation with community members and representatives by states, outside agencies or other entities; Percentage of community members including elders/ traditional subsistence practitioners/traditional food producers/knowledge holders/ users participating in and/or taking a leadership role these consultations and resulting activities and programs.</p>	<p>2. Number of development projects/proposals from outside Indigenous communities that respect and uphold the rights of free prior informed consent, self-determination and development as defined and assessed by impacted community members including traditional subsistence producers/users.</p>
<p>3. Number of ordinances and laws passed by Indigenous Peoples' own governing bodies and leadership institutions related to protection of food sovereignty, food producing lands, territories and resources; number of national/state/provincial laws and programmes (including those providing financial assistance to communities) that support and/or undermine the implementation of these tribal/Indigenous community ordinances and laws.</p>	<p>3. Number of programmes in Indigenous communities to inform and assist community members, leaders and practitioners to know their rights and available mechanisms/processes to assert these rights; Numbers of participants in these programmes (general and also specific to women, youth and elders).</p>	<p>3. Number of Indigenous community members, including community leaders, who understand the relationship between their rights to self determination and self government, their food sovereignty/food security and their community health and well being.</p>

Appendix table 4: Indicadores culturales relevantes de Soberanía Alimentaria de los Pueblos Indígenas (experiencia del SNU en Nicaragua) por Galio C. Gurdíán, Virgilio Rivera, Marianela Corriols, Mireille Vijil. Bilwi, Nicaragua, 7 Septiembre 2006.

	Indicadores culturales relevantes en Soberanía Alimentaria	Estructural	Proceso	Resultados
Territorio	1. Acceso e integridad a las tierras, aguas y habitat tradicionales	Existencia del ordenamiento jurídico e institucionalidad en defensa de los territorios, aguas y habitat tradicionales indígenas. En el caso de Nicaragua Ley 28 y Ley 445.	Número de Políticas públicas, programas, proyectos, resoluciones, ordenanzas para el cumplimiento del ordenamiento jurídico establecido.	Número de territorios y tierras indígenas demarcados, titulados y registrados y protegidos.
Producción y Bienes y Servicios Ambientales (BSA)	2. Abundancia, escasez o amenazas a semillas, plantas medicinales y animales de alimentación tradicional	<p>Número de Programas y proyectos de Manejo y conservación de ecosistemas lagunares, cuencas y humedales en comunidades indígenas.</p> <p>Número de Programas y proyectos para el cumplimiento del (ODM #1): Promoción y desarrollo capacidades y recursos locales para la producción de alimentos con municipios indígenas.</p> <p>Promoción de turismo comunitario indígena con indicadores de sostenibilidad.</p> <p>Número de políticas, programas y proyectos</p>	<p>Mejorada la calidad de vida (Índice de Desarrollo Humano) en comunidades indígenas mediante el uso sostenibles del Medio Ambiente y sus recursos naturales.</p> <p>Número de Planes de desarrollo municipales que integran acciones dirigidas a garantizar la soberanía alimentaria de las comunidades indígenas.</p> <p>Número de políticas públicas, programas y proyectos para el desarrollo del turismo</p>	<p>Beneficios directos a las comunidades por la utilización sostenible de sus recursos y la producción de bienes y servicios ambientales (BSA).</p> <p>Cumplimiento del ODM#1 y soberanía alimentaria de comunidades indígenas al año 2015.</p> <p>Número de comunidades indígenas controlando y beneficiándose de sus recursos naturales y paisajísticos.</p> <p>Certificación y nominación de origen de semillas y material vegetativo de territorios y comunidades indígenas.</p>

		en rescate y desarrollo de la biodiversidad y riqueza genética en territorios indígenas.	comunitario. Fortalecimiento de sistemas productivos locales (Conglomerados) en base a la biodiversidad y riqueza genética autóctona. Número de redes empresariales comunitarias existentes.	Biodiversidad de territorios y comunidades indígenas restaurada y protegida. Construcción de modelos de desarrollo humano sostenible indígena funcionando. Modelo de desarrollo humano sostenible indígena funcionando.
Salud	3. La disminución o aumento en el consumo y preparación de medicinas y alimentos tradicionales de origen animal o vegetal incluyendo uso ceremonial y doméstico cotidiano.	Ordenamiento jurídico nacional y regional que reconoce y legitima la medicina tradicional y las terapias alternativas medicinales indígenas (AM).	Inclusión de plantas medicinales tradicionales a la farmacopea nacional. Número de practicantes, parteras y médicos tradicionales funcionando en territorios y comunidades indígenas. Instituciones de Educación formal e informal investigando, sistematizando, desarrollando y transmitiendo saberes y técnicas sobre medicina tradicional.	Funcionamiento pleno de Sistemas Regional, Municipales y Territoriales de salud que incorporan la medicina tradicional. Numero de practicantes, parteras y médicos tradicionales formados. Centros de procesamiento indígenas produciendo medicina y distribuyendo medicinas tradicionales.
Recreación	4. Grado de continuidad de prácticas o uso de ceremonias, danzas, oraciones, canciones y tradiciones orales utilizando alimentos tradicionales	Ordenamiento jurídico e instituciones nacionales, regionales, municipales y comunitarias que protegen, impulsan y fortalecen prácticas o uso de ceremonias, danzas, oraciones,	Montos Presupuestarios (Nacional, Regional y Municipal) destinados al fortalecimiento de actividades recreativas que utilizan alimentos	# de centros de preparación y expendio de alimentos (Escuelas, centros de salud, comedierias, hoteles, restaurantes) que utilizan insumos y recetas tradicionales.

		<p>canciones y tradiciones orales utilizando alimentos tradicionales.</p>	<p>tradicionales.</p> <p># de Instituciones de Educación formal e informal investigando, sistematizando, desarrollando y transmitiendo cultura memorias y practicas relacionadas ceremonias, danzas, oraciones, canciones y tradiciones orales utilizando alimentos tradicionales.</p> <p># de especialistas conocedores de la cultura y alimentos tradicionales funcionando en territorios y comunidades indígenas.</p>	
Educación	<p>5. Preservación y continuidad del uso de idioma, cuentos, narrativas, ceremonias, nombres tradicionales para alimentos y procesos (siembra, caza, recolección, cosecha, preparación, etc.)</p>	<p>Ordenamiento Jurídico que reconoce y legitima educación intercultural bilingüe y el rescate de lenguas indígenas en peligro de extinción.</p> <p>Monto presupuestario nacional, regional y municipal destinado al rescate y fortalecimiento de las lenguas indígenas.</p> <p># de instituciones de educación formal e informal y centros de investigación</p>	<p># de escuelas normales que incorporan en sus programas la educación intercultural bilingüe.</p> <p># de docentes indígenas formados en la educación intercultural bilingüe.</p> <p># y calidad de textos publicados y utilizándose en programas</p>	<p>Sistemas lingüísticos de pueblos indígenas fortalecidos y en desarrollo.</p> <p># de hablantes lenguas desagregados por género y ciclo de vida.</p>

		<p>trabajando en el rescate y fortalecimiento de lenguas indígenas.</p> <p># Políticas, programas y proyectos con pertinencia cultural en apoyo a la promoción de derechos de la niñez y adolescencia en comunidades indígenas.</p>	<p>intercultural bilingüe.</p> <p>Escalafón, salario y prestaciones de docentes indígenas especializados en educación intercultural bilingüe.</p> <p>Informes de Desarrollo Humano sobre pueblos indígenas que utilicen y validen los nuevos indicadores culturalmente pertinentes.</p>	
Espiritualidad	6. Integridad y acceso a sitios sagrados para ceremonias relacionadas con uso de fuentes tradicionales de alimentación	<p>Existencia de Ordenamiento Jurídico que reconoce y legitima sitios sagrados para ceremonias relacionadas con uso de fuentes tradicionales de alimentación.</p> <p>Monto presupuestario nacional, regional y municipal destinado reconocer y legitimar sitios sagrados para ceremonias relacionadas con uso de fuentes tradicionales de alimentación.</p> <p># de instituciones de educación formal e informal y centros de investigación que</p>	<p>Políticas, programas y proyectos con pertinencia cultural que incorporan y reconocen y protegen la existencia de sitios sagrados vinculados a fuentes de alimentos tradicionales.</p>	<p>Sitios sagrados para ceremonias vinculados a fuentes de alimentos tradicionales identificados, protegidos y restablecidos.</p>

		trabajan en identificar y rescatar sitios sagrados vinculados a alimentación tradicional.		
Migración	7. Tasas de migración rural a centros urbanos y posibles patrones de migración de retorno; relación con uso continuado de alimentos tradicionales	Existencia y organización de unidades estadísticas nacionales, regionales y municipales que generen cifras confiables demográficas, migratorias y alimenticias.	Programas de formación de recursos humanos indígenas para generar estadísticas e indicadores de Desarrollo Humano Sostenible culturalmente pertinentes. Desarrollo de redes de abastecimiento y mercados para alimentos tradicionales en sitios de emigración. Existencia de publicaciones especializadas sobre el valor y calidad de alimentos tradicionales.	Censo de población indígena y hábitos de consumo desagregados por género, edad y grupo étnico en centros urbanos y metropolitanos. Número de establecimientos de atención integral a población indígena inmigrante en centros urbanos y metropolitanos.
Consentimiento libre, previo e informado- (CLPI) (Comunicación, información y participación organizados)	8. Cantidad y efectividad de consultas con integrantes y representantes de la comunidad para planificar, implementar y evaluar aplicando el CLPI y pertinencia cultural a políticas y programas de desarrollo de Estados, agencias externas u otras entidades	# de leyes, instituciones, decretos para exigir, monitorear y evaluar la aplicación de CLPI en convenios internacionales, políticas públicas nacionales, regionales y municipales, agencias externas de cooperación multilateral, bilateral y ONGs.	# de políticas públicas, programas y proyectos formulados e implementados y evaluados en base al CLPI.	Fortalecimiento de identidad, autodeterminación y mejoría del índice de desarrollo humano sostenible de Pueblos Indígenas.
Autodeterminación y	9. Ejercicio efectivo de derechos políticos	Existencia de ordenamiento jurídico	Existencia de instituciones y	Fortalecimiento de identidad, autodeterminación y mejoría

Autonomía	vinculados a la autonomía y autodeterminación.	que reconozca y garantice derechos históricos, económicos, sociales, culturales, civiles y políticos de Pueblos Indígenas.	políticas públicas que implementen el ordenamiento jurídico de derechos autonómicos. Articulación y presencia de modelos y propuestas de desarrollo de Pueblos Indígenas en planes nacionales de desarrollo.	del índice de desarrollo humano sostenible de Pueblos Indígenas. Institucionalidad autonómica consolidada y en pleno funcionamiento. Sociedad y Estado incluyentes Interculturales y multiétnicos.
------------------	--	--	---	--