Discussion Paper

The Vision and Perspectives of the *Satoyama* Initiative

Satoyama landscapes are complex mosaics comprised of satoyama and other elements such as cultivated land, rural settlements, irrigation ponds and trenches, and other features that result from different types of land usage that are functionally linked to one another. These satoyama were once used as forests and for agricultural purposes, firewood and charcoal biofuels, coppice woodlands for thatch, among other rural production-based resource use activities. Satoyama landscapes have historically provided a wide range of ecosystem services to humans, which include non-material benefits such as traditional community identity and cultural heritage in addition to an awareness of the importance of sustainable use/management of natural resources. Such relationships between humans and nature and the landscapes resulting from them exist not only in Japan but throughout Asia and other parts of the world with local terms such as *muyong*, *uma* and *payoh* in the Republic of the Philippines, *mauel* in the Republic of Korea, *sehesa* (silvopastoralism) in Spain, and *chitemene* (slash and burn agriculture) in Malawi, Zambia and Mozambique. Under the *Satoyama* Initiative, landscapes that have been formed through numerous types of human endeavours, such as agriculture and forestry, are called “satoyama-like landscapes”. Accordingly, agroforestry and communal forests are common features of satoyama-like landscapes in various parts of the world. A multi-functional land use practice, as found in satoyama-like landscapes, relies on traditional knowledge and requires concerted actions within the community. Yet, due to various forces of modernization and urbanisation, such practices have been increasingly undermined or abandoned, and many landscapes including satoyama-like landscapes face a crisis of losing their integrity. The socio-ecological production systems in satoyama-like landscapes support the present policy goals of pursuing low-carbon, resource circulating (reduce, reuse and recycling of resources), and nature harmonious societies. Furthermore, by supporting and developing systems that are well-adapted to prevailing socio-economic problems, climate change and other global environmental issues, satoyama-like landscape contributes to the goals of tackling food and fuel shortages and reducing poverty in the context of promoting human development.

The Fifth Meeting of the Conference of the Parties to the Convention on Biological Diversity (hereinafter: “the Convention”) (2000) adopted the "Ecosystem Approach" as a strategy for the integrated management of water resources, biological resources and land. This was followed by the adoption of the "Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity” by the Seventh Meeting of the Conference of the Parties to the Convention (2004). In view of the already well-established benefits that have arisen from these schemes, the Government of Japan (Ministry of the Environment) and the United Nations University Institute of Advanced Studies (UNU-IAS) are currently preparing to propose under the banner of the *Satoyama* Initiative in the lead-up to the Tenth Meeting of the Conference of the Parties to the Convention. The *Satoyama* Initiative advocates the forging of common global strategies and cooperative frameworks for maintaining and rebuilding satoyama-like landscapes in order to support the promotion of a Post-2010 Strategy, while ensuring sensitivity to the ethno-historical, cultural and ecological

understandings of potential partners outside of Japan where such landscapes are located.

This document was prepared based on the results of discussions during the "SATOYAMA Initiative International Workshop" convened in Tokyo, in March 2009 by the Ministry of the Environment Japan and the "International Expert Meeting on International *Satoyama* Initiative Concept" convened in Tokyo, in July 2009 by the Ministry of the Environment Japan and UNU-IAS.

I. **Satoyama-like landscapes/ Socio-ecological production systems**: Potential and challenges

(1) Ecosystem services and agricultural productivity

We anticipate that sustainable socio-ecological production systems in satoyama-like landscapes will provide long-term stability in the production of food and fuel, which are basic necessities for human life. It is expected that socio-ecological production systems enhance agricultural productivity and resource efficiency to produce food and fuel that are necessities for human livelihood. At the same time, they can support the sound circulation of nutrient and water resources in ecosystems and can promote biodiversity conservation and the sustainable use of biological resources by providing important space for plant species and habitat for wildlife. Such systems can also help reduce the erosion of land due to wind and water and maintain the disaster preparedness of ecosystems. The reinvigoration and review of agricultural production systems in satoyama-like landscapes in food importing areas or countries can help optimize resource use at the national and international levels, and reduce excessive pressures on ecosystems and water resources, particularly for food exporting countries. Enhanced ecosystem management also helps to maintain and expand carbon sinks that are important factors for tackling climate change. It is also likely that by enhancing ecosystem management, it will be possible to promote the adaptation to climate change as well as the maintenance and growth of carbon sinks and the reduction of emissions.

(2) Socio-cultural benefits

Sustainable socio-ecological production systems in satoyama-like landscapes provide various socio-cultural benefits. These include employment (a means of livelihood), salaries and social security. as well as strengthened communal industry and entrepreneurs in the community. In particular, we anticipate the growth of so-called Bottom-of-the-Pyramid (BOP) businesses, which aim to target the poor people of developing nations. Such systems can support the equitable sharing of benefits arising from the socio-ecological production systems, if appropriate institutional mechanisms are in place. With the increased revenue for the community, social investments can be made in local infrastructure such as clinics and schools that enhances human well-being. Socio-ecological production systems in satoyama-like landscapes provide an important foundation for cultural, religious and spiritual traditions and customs. They also give confidence and a source of pride for local peoples and communal cohesiveness for local communities. Revitalization of rural communities can moreover help to reduce the rural-urban migration of people including those hoping to find better opportunities for jobs.

(3) Policy challenges

Behind the various issues faced by socio-ecological production systems in satoyama-like landscapes lies the problem that the ecosystem services they provide have not been adequately evaluated. The followings are identified as major policy challenges so far.

i. Clarifying key trade-offs and synergies in socio-ecological production systems in satoyama-like landscapes; there is a need to clarify short-term and long-term costs and benefits of supporting socio-ecological production systems in satoyama-like landscapes;

ii. Strengthening the understanding of the linkages among biodiversity, ecosystem functions, ecosystem services, societal needs and adaptability to socio-economic circumstances and changes in the natural environment such as climate change, taking into account the specific conditions of local communities and countries;

iii. Developing management plans that are conducive to maximizing ecosystem service delivery with the active participation of stakeholders; and

iv. Developing policy measures to promote communities' initiatives to manage and operate socio-ecological production systems taking into account the importance of (a) enhancing autonomy of the communities associated with natural resource use and land use conversion by diversifying livelihoods, and (b) an institutional framework for rewarding composite value arising from the production system.

II. The *Satoyama* Initiative

The *Satoyama* Initiative is an international effort that aims to maintain and rebuild Satoyama landscapes (areas that were formed through human endeavours such as agriculture and forestry), where the relationships between humans and nature are more sustainable from a natural resource utilization/management and land usage perspective. Looking forward, we will establish the *Satoyama* International Partnership (provisional name), an international framework that will confer on the exchange of information, the effective implementation of various schemes and other matters, in order to formulate common global strategies.

1. Activities

The initial main activities will potentially include the following:

(1) To gather and analyze case studies from around the globe which illustrate the sustainable use/management of natural resources in satoyama-like landscapes and their benefits to human well-being.

(2) To assist in the enhancement of information dissemination and capacity building.

Through (1) above, case studies gathered will be integrated into a searchable database where information may be found using keywords such as the region or environmental state. This will enable people who require specific information to refer to lessons that were derived from individual case studies. In regard to the practical measures for systems and technology supporting sustainable use/management of natural resources for human

well-being, they will be organized so as to facilitate application in the field and studies for the development of new practices and methods.

An online portal site has been set up in order to provide information such as on the activities of the Initiative. The database that is to be created will be posted on the site. This should prove useful for enhancing information dissemination and capacity building.

(3) Development of an action plan for the Initiative.

Challenges relevant to maintenance and rebuilding of satoyama-like landscapes will be organized for discussion on global challenges and response measures. Based on this discussion, an action plan will be developed to promote the maintenance and rebuilding of satoyama-like landscapes globally. Alliances will also be forged with donor agencies in order to promote the formulation of the type of projects that might become model case studies.

2. Framework for advancing the *Satoyama* Initiative

The *Satoyama* International Partnership will be comprised of participating international agencies, national governments, local governments, civil societies, private companies, NPOs/NGOs, universities, institutions and other organizations that will work together for the purpose of maintenance and revitalization of satoyama-like landscapes where human-nature relationships are more sustainable in regards to land and natural resources use/management. Those who participate in the Initiative will be encouraged to provide information about case studies of actual activities, to store information in the database and disseminate lessons derived from case studies, practical systems and technology through the database. Furthermore, regular meetings will be convened and the portal site will be utilized for promoting cooperation and timely information sharing between all partners.

3. The vision and perspectives of the *Satoyama* Initiative

Based on the discussions during the previous meetings, the following Threefold Vision has been designed. It consists of 3 points which together, are considered to be absolutely critical for the sustainable development of satoyama-like landscapes in the future.

(1) The Threefold Vision

i. Consolidation of wisdom on the sustainable use, reuse and recycling of natural resources and harmonious co-existence between nature and human society.

The natural environment and human endeavours such as production activities have reached their present-day forms after going through numerous changes which impact one another. Although the intervention of modern scientific technology in nature may have enhanced productivity in a local or temporary sense by isolating and strengthening specific functions of ecosystems, such effects are not necessarily purely positive if viewed over a broader area or in the long-term.

In order to facilitate the sustainable utilization of natural resources without damaging the balance and stability

of ecosystems, the usage and management of natural resources by agriculture, forestry and other industries must be conducted in a manner that takes advantage of natural processes and integrates them with artificial processes. Doing so will ensure that the natural resources are recycled in the area, and the organisms may reproduce, thus strengthening the foundations for human activities through the formation of healthy ecosystems.

Although the negative impacts of climate change will affect the entire world, it is likely that the Polar Regions, small island nations, large Asian deltas and the entire African region will bear the brunt of its effects. The issue of reducing global green house gas emissions as we enhance the capability of adaptation to climate change is vital. Much attention is currently being focused on systems that recycle natural resources, particularly those that utilize biomass (reproducible organic resources that are produced by flora and fauna) efficiently in areas as mechanisms of suppressing the production of carbon dioxide due to the combustion of fossil fuels. Ecological wisdom that relates to the utilization of biomass as the raw materials for fuel, fertilizers and manufactured goods exist in many parts of the world in forms that are appropriate to various societies. The aim of the Initiative is to consolidate such wisdom so that it might contribute to the integrated management of natural resources in satoyama-like landscapes, the realization of low-carbon societies and the enhancement of human well-being.

ii. Integration of traditional ecological knowledge with modern science

Understanding the regional environments that have been experientially, practically or traditionally passed down within the social and natural context of an area will provide us with important suggestions about natural resource utilization, management techniques and systems that are suited to the societies and ecosystems of those regions. To date, traditional ecological knowledge has provided information to modern sciences such as taxonomy, pharmacology, and agricultural science, and thus contributed to the development of such fields. In contrast to the perspective which views humans and nature as being pitted against one another, typical traditional wisdom is in many cases rooted in a world view in which people, animals, plants and other structures in the universe are linked to one another. The Initiative aims to develop production and management systems that are suited to prevailing socio-economic circumstances and changes in the natural environment, such as climate change, by integrating modern scientific knowledge with the world views, history, cultures, traditions and customs that produced these landscapes while at the same time paying them due respect. By doing so, the Initiative will endeavour to maintain and enhance the productivity of regional industries such as agriculture and enhance human well-being.

iii. Creation of a “New Commons”

“Commons” may be viewed as the natural environment that is utilized and managed on a “shared” basis (between “public,” or belonging to national or regional government entities, and “private” or belonging to individuals) as well as the systems that exist for such purposes. In order to facilitate the sustainable utilization

of natural resources, not only must human-nature relationships be brought into line with one another, human relations and social mechanisms must also be altered to make this possible.

The issue of switching to economies that evaluate biodiversity and ecosystem services properly in order to achieve sustainable usage and management is critical and, while various discussions that deal with this topic are currently underway around the world, there is still not enough being done. In many places in the world, organizations and systems that promote the shared usage and management of resources and land based on a variety of social standards and values (including things such as human well-being and sustainability, for which monetary value has not been calculated) are maintained or being established. The Initiative views these systems as new commons, and aims to maintain and develop them.

Based on the above Threefold Vision, the following five perspectives will form the approaches for the maintenance and rebuilding of satoyama-like landscapes, contributing to developing new paradigms for the sustainable use/management of land and natural resources in each regional area. The bracketed numbers after each paragraph title indicate the Threefold Vision components that are linked to the subject matter of that paragraph. The Vision and the Perspectives would be the main elements of common shared strategies to be developed for the Initiative.

(2) The Five Perspectives

i. Understanding the features of the landscape and assessing the carrying capacity and resilience of the natural environment ((1)i, (1)ii)

Excessive burdening of ecosystems will weaken their carrying capacity and cause changes (for the worse) in the quality of those ecosystems. For example, land deterioration may be caused by the (excessive) grazing of domestic livestock beyond the regenerative capability of the plants on the land, the (excessive) gathering of firewood, the (excessive) irrigation of cultivated crops to a level that exceeds the required amount of water and the (excessive) cultivation of agricultural crops in areas that are unsuitable for those crops. It is important that the inherent features of biodiversity and ecosystems in each regional area are well understood. Simultaneous to grasping various natural settings such as topography, soil and climate, the structure and processes of the landscape must be scientifically understood from the perspective of such things as spatiotemporal mosaic-like features (complex ecosystems), functional relationships between different types of land usage and the sustainable use, reuse and recycling of natural resources. It is vital that the relationships between such natural landscape features and the provisioning and regulating services obtained from local biodiversity and ecosystems are understood. Thus, attention to the carrying capacity and resilience of the natural environment is critical so as to ensure that such knowledge might lead to sustainable use and management of natural resources and the stabilization and improvement of agricultural production.

ii. Appraising local traditions and culture and adapting them to modern-day environmental and socioeconomic conditions ((1)i, (1)ii)

It is important that we respect the unique history, cultures and traditional ecological knowledge that produced these landscapes and the efforts of the local communities who nurtured such customs and ways of life. It is anticipated that the rationale behind systems of traditional land-use, resource utilization and management will be demonstrated and, simultaneously, that local history and culture will be preserved. The integration of modern and traditional knowledge in a mutually reciprocal manner that is in line with regional circumstances will facilitate the effective utilization of such knowledge in the areas. Dually, integration of local knowledge and modern knowledge will ensure that any partnerships between communities and modern practitioners who own such knowledge will be fair and equitable. By integrating traditional ecological knowledge with modern scientific techniques, it is also hoped that communal industries and mechanisms that may be adapted to modern-day socioeconomic conditions and environmental changes will be developed. In this context, cultivated plant genetic diversity, which is maintained by farmers in the field, would be one of the keys to be looked at, as it is the factor that enables adaptation to changing environmental conditions, such as climate change. By integrating modern scientific techniques with traditional knowledge related to plant properties, uses and cultivation methods, we hope to utilize the genetic diversity of cultivated plants to bring about regional and global food security and measures for alleviating poverty.

iii. Formulating plans for the purpose of optimizing ecosystem services ((1)i, (1)ii)

In order to formulate plans for the purpose of optimizing ecosystem services, land usage practices which applies the structural and process features of satoyama-like landscapes wisely based on land and resource use must be investigated. Further, topography, soil and climate must also be considered. To achieve this, a comprehensive cross-sectional approach spanning a range of sectors is required to ensure that the relationships between different types of land usage, including the practices of sustainable use, reuse and recycling of natural resources, are comprehensively integrated and function effectively. In order to enhance community-based activity feasibility, it is important to encourage multiple stakeholder participation in all levels of planning. Moreover, in view of the fact that ecosystems are in a continual state of flux (a situation that involves a high degree of uncertainty), which may increase under global climate change, it is important that adaptive approaches are adopted in order to facilitate the utilization of ecosystem services under optimal conditions within the scope of the carrying capacity and resilience of the natural environment.

iv. Wide range of stakeholder participation in land and natural resources use/management ((1)ii, (1)iii)

The fact that there are insufficient funds and systems in place for managing forests, grasslands and water reservoirs, as well as development pressure to pursue short-term profits, are problematic among many across the globe. In order to resolve this issue, perspectives that view commons as joint assets which should be maintained by the collective community are once again coming to the fore. In the past, commons carried with them the associated problem of resource overexploitation, owing to joint usage; however, it is conceivable that this problem may be avoided in the future by establishing sustainable management regulations and rules.

Natural resources may even potentially be managed from a more broad-based perspective through the creation of mechanisms for sharing the associated benefits and burdens more broadly, not only the landowners themselves, but the collective community of those participating in land use and management activities, including various stakeholders in areas that benefit from ecosystem services provide by the socio-ecological production landscapes.

v. Contributions to local communities' livelihood ((1)i, (1) ii, (1) iii)

A balance between regional development and land usage/natural resource utilization is essential to ensure sustainable use/management of land and natural resources. In order to achieve this critical balance, so that land is used and natural resources utilized and managed in a sustainable manner, a balance must be struck with regional development. In order to do this, socio-economic systems that enable local residents to be proactive in sustainably utilizing and managing natural resources need to be developed. This will entail economic and technical assistance so that the autonomy of the communities associated with land and natural resources is enhanced and communities' initiatives to operate socio-ecological production systems is facilitated. Education on the importance of sustainable natural resource utilization and management will also prove vital, as will the development of the personnel who will be at the core. For the communities' revitalization, new values must be created for resources through such things as ecotourism development, the environmentally-conscious utilization of biomass resources, certification schemes for environmentally-sound agricultural methods and crop production, and farm-fresh schemes that directly link consumers with producers. The creation of new values for resources may facilitate assessment and valuation of the contributions made by satoyama-like landscapes to human well-being such as food and resource security, and poverty alleviation. It is also important to evaluate properly the cultural and educational benefit arising from satoyama-like landscapes/socio-ecological production systems as well as the social benefit of maintaining and rebuilding communities i.e.; social foundation, in pursuit of maintaining/rebuilding satoyama-like landscapes and socio-ecological production systems.