



SATOYAMA ONLINE: NON-FORMAL COURSE ON SOCIOECOLOGICAL PRODUCTION LANDSCAPES AND SEASCAPES (SEPLS), ITS ORGANIC AGRICULTURE PRACTICES, CURRENT CHALLENGES, AND INITIATIVES

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ABSTRACT – Socioecological production landscapes (SEPL) or *satoyama* as adopted during COP 10 are traditional landscapes characterized by subsistence farming and secondary forests surrounding villages prevalent in east Asia and southeast Asia. In the Philippines, we call these landscapes in many different names: *muyong*, *lasang*, *bungtod*, *gubat*, etc. Due to population pressure, *satoyama* landscapes had been overly used and degraded, resulting to poor productivity and abandonment. This non-formal course had been designed to enhance awareness about this rural landscape, identify the different types of *satoyama* landscapes in the Philippines and propose some appropriate strategies to rehabilitate degraded *satoyama* landscapes. Three distinct *satoyama* are identified in the Philippines: 1) *satoyama* with rice farms, including the Ifugao Rice Terraces, a UNESCO World Cultural Heritage site, 2) *satoyama* with mixed rice and other crops and, 3) *satoyama* with corn farms. Traditional SEPL practices organic agriculture for centuries. The managed forest, a requirement before a farm is established is taken care of, to have the best ecosystem services for the farm and the village communities. Water and organic matter from the forest had been the major farm inputs. Farm remains are decomposed naturally for organic fertilizers. At present, these landscapes suffer from overutilization and an alarming biodiversity loss. Though older generation still prefer the organic way of farming, yet many are trying to resort to use of inorganic way. Many supposedly managed forests are either mismanaged or deserted. Open Online Course (OOC) on *satoyama* has been offered for free at the University of the Philippines Open University (UPOU) to enhance conservation of this endangered landscape. Hopefully, this course will help inculcate the concept of the *satoyama* landscape, bringing about social transformation and subsequently, environmental rehabilitation and sustainable farm production.

Keywords: *organic agriculture, socioecological production landscapes, sustainability*

INTRODUCTION

In the rural scene, particularly, in the olden times, moderate interaction of humans with their environment resulted to a unique landscape that is diverse and sustainable. This is the socioecological production landscapes known in many different names in many parts of the world. In Japan, this is known as *satoyama* landscapes and has been recognized as a strategic approach in landscape rehabilitation and restoration (IPSI 2021, Duraiappah et al 2012, Nature Conservation Bureau. 2003, Oku and Fukamachi 2000). In fact, the Satoyama Initiative was adopted during the COP 10 in Japan (United Nations University and the Ministry of Environment, Japan 2010). These traditional landscapes are characterized by subsistence farming and secondary forests prevalent in East Asia and tropical Southeast Asia (Buot 2008a, 2008b, Buot and Osumi 2004, Fukamachi et al 2003). In the Philippines, three types (Buot and Osumi 2004) had been identified: 1) *satoyama* associated with rice farms in northern Philippines, 2) *satoyama* associated with corn farms in central and southern Philippines and 3) *satoyama* associated with mixed crops like rice or corn and coconut, banana, etc., common in central and southern Philippines.

Through the years, these socioecological landscapes had been practicing organic agriculture (Cruz et al 2014). In fact, many still do (Flores and Buot 2021). However, many are resorting to the inorganic way to cope with population pressure and globalization. The changing dynamics led to destruction of soil physicochemical profile, resulting to poor food production, lack of passion for farming, farm abandonment and migration to urban centers.

It is the main goal of this paper to 1) discuss how the short course on Satoyama Online should enhance awareness about *satoyama*, 2) identify *satoyama* landscapes in the Philippines and, 3) propose initiatives in rehabilitating degraded *satoyama* landscapes.

METHODOLOGY OF THE NON-FORMAL COURSE

The course was offered completely online asynchronously, as an Open Online Course (OOC) at the Faculty of Management and Development Studies, University of the Philippines Open University using the MOODLE as the main learning management system (LMS). It was first offered sometime in 2014. Just like any other online course, the course guide was completed first before the offering. Discussion topics were in place and the assignments were decided already. After three to four semesters as an OOC, it was offered as a massive open online course (MOOC), coordinated by the Faculty of Management and Development Studies, UP Open University.

DISCUSSION

Satoyama landscape awareness

Satoyama is a Japanese word referring to a traditional socioecological production landscape existing not only in Japan, but in other parts of the globe as well (Buot 2008a, 2008b, Buot and Osumi 2004, Fukamachi et al 2003). In 2010, *satoyama* was not only within the confines of Japan, when it was approved as a global initiative known as the International Partnership for the Satoyama Initiative (IPSI) by the Convention on Biological Diversity (CBD) of the United Nations during the Conference of the Parties 2010 (COP 10) (IPSI 2021).

Why bother about *satoyama* landscape? Why should we study about *satoyama* landscape interaction, when it is currently under a state of degradation? Actually, this rural landscape is indeed

intriguing because human-nature interaction was then at its best (IPSI 2021, Nature Conservation Bureau. 2003, Oku and Fukamachi 2000). We would like to know why it was so? Then perhaps, we can learn how to capture the lesson of its serenity, sustainability, harmony and resiliency in the past.

With the onset of the digital era, internet was accessible for many. We then thought that Satoyama Online as an OOC can be very useful and relevant in educating a lot of people. Education regarding *satoyama* as a landscape and how learning from its principles can help us design landscape rehabilitation strategies during this time of massive ecosystem destruction. We conceptualized the course just as other non-formal courses offered at the UPOU (Buot and Cruz 2014, Cruz et al 2014). The objectives of the Satoyama Online include, 1) discussing education campaign and awareness about *satoyama* landscape and its relevance in solving today's environmental degradation problems, 2) identifying model *satoyama* landscapes in the Philippines and, 3) designing sound strategies suitable in rehabilitating degraded *satoyama* landscapes.

We proposed and implemented the following topics to meet the objectives of the course: Module 1 Introduction to *satoyama*, Module 2 Practical ecology, Module 3 Sustainable development, Module 4 Nature, culture and heritage, Module 5 Applying the *satoyama* framework: a case study.

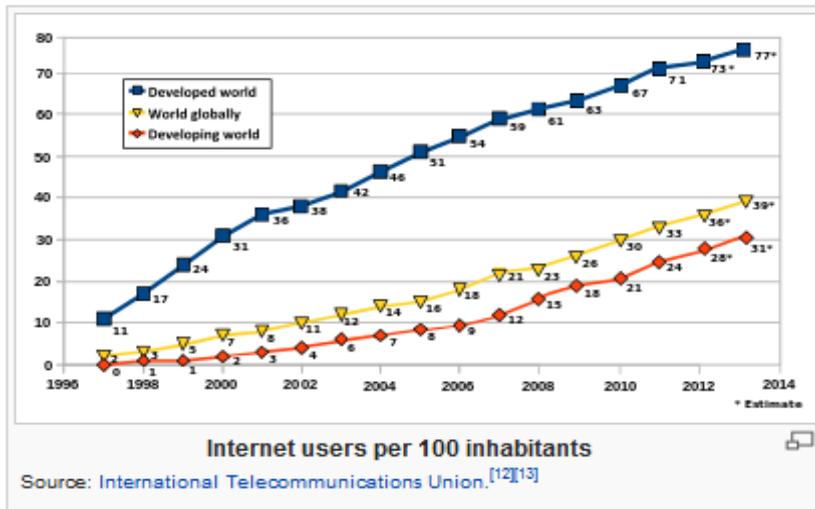


Figure 1. Increasing number of internet users worldwide. Source: International Telecommunications Union 2014.

In Module 1, we are to study the structure of *satoyama* landscape in the Philippines. A typical *satoyama* landscape (Figure 2) always has a forest which exudes ecosystem services as fresh air, water and organic matter, patches of grasslands, farm (could be rice, coconut, corn, etc), and the village communities (Buot et al. 2020, Buot and Rabena 2020). These components are interacting in harmony. The village knows that each component is vital to the survival of the community residents. The forest is the source of fuelwood, timber and wild fruits, medicinal herbs and food needed by every family. It has a community of pollinators to sustain diversity of plants needed by the animal populations within the forest landscape. The grassland is the source of grasses and legumes serving as forage for farm livestock and commercially grown animals for family cash needs.



Figure 2. The structure of the *satoyama* landscape in Mayoyao, Ifugao, comprising managed forests (*muyong*) as source of water and organic matter, some patches of grasslands as source of forages for the farm animals, the farm and of course the village communities.

The farm has a main crop usually rice, corn or other staples. However, most farmers have many other crops planted around the main crop or in between each main crop which could be source of cash or additional food or vegetables. The village communities around the farm have plenty of vegetable gardens too and animals which could be sources of cash like swine, poultry and others. Organic agriculture is a way of life in rural communities then. People have compost heap and compost pit to recycle farm wastes.

There is a need for everyone to know about this subsistent lifestyle, in *satoyama* landscapes where villagers and nature exist in harmony. People take nature walk every now and then, to monitor landscape scenarios and check for every disturbance, whether natural or anthropogenic, to avoid untoward incidents that may have adverse impact to the landscape and its ecosystem services and the human communities. Each one has a genuine concern for everyone and for nature.

During this Anthropocene Epoch (National Geographic Society 2019), where humans dominate over nature, nature walk is very uncommon. People just know that they are endangered, when the calamity is in front of the community already and there is no more time to save enough of nature or even worse at times, to save an endangered human life. At present, these landscapes suffer from overutilization and an alarming biodiversity loss (Fig. 3) (Buot 2004, 2007a, 2008a, 2008b, 2008c).

The Philippine satoyama landscapes

In order to fully understand the subject of the Satoyama Online course, it is best to learn first the *satoyama* in the Philippine context. We have to know the structure of the landscape and its variation in various localities in the country. Buot and Osumi (2004) identified *satoyama* landscapes in the Philippines as 1) *satoyama* associated with rice farms, 2) *satoyama* associated with mixed rice and other crops and, 3) *satoyama* associated with corn farms. *Satoyama* associated with rice farms are common in northern Luzon, particularly in the Cordilleras, the rice terraces in Ifugao and Mountain Province. People have their

managed forests, the *muyong* (or known in many different names even in the Cordilleras), the rice farms in terraces and the villages in the vicinities. People depend on the forest for the sustainability of the terraces and the village. As a rule, a forest has to be established first before a terrace can be constructed. The forest is the source of water flowing into the paddies. Organic fertilizers are taken from the forest too. Hence, the need to establish the forest first (Cruz et al 2014).



Figure 3. A farmer doing swidden farming in the slopes of Mount Mayon, Albay.

The *satoyama* associated with mixed rice and other crops are common in southern Luzon areas, particularly in Quezon and Bicol Peninsula and part of the Visayas near Bicol, that is Leyte (Buot and Osumi 2004). In Quezon province, it is near the huge mountain mass, Mount Banahaw (Banaticla and Buot 2005). Common crops associated with rice are coconuts, bananas, corn, and vegetables, *gabi* or taro (Leyte). In Quezon, the villages and farms are dependent on Mount Banahaw forest resources. In Bicol, people are dependent on Mount Mayon forests.

Satoyama landscapes associated with corn farms are very common in central and southern Philippines (Buot and Osumi 2004). Forests where people are dependent upon are known as *lasang* or *bungtod*. When people are asked as to the whereabouts of their parents for instance, they would tend to answer, “They are in *lasang* or in *bungtod*” referring to their farms near forests.

Incidentally all of these *satoyama* landscapes have threats, particularly, the forest components. This is evident in the zonation of the forest landscapes on Mount Pulag, northern Philippines (Buot and Okitsu 1999, 1998) and the anomalous structural characteristics of Mount Akiki (Buot 2007b). There is proliferation of pines in the lower altitudes, and they encroached in higher elevations with continued deforestation in the uplands (Buot 2014). In southern Luzon mountains and even in central Philippines, the same trend is happening. The main cause is the destruction of the main dominant species in the upper elevations. With that, the lower elevation species immediately colonize the bare landscapes and dominate while the original dominant is still recuperating. This happens in Mount Makiling (Buot and Osumi 2011,

Lambio and Buot 2011), Aborlan Guba System in Palawan (Sopsop and Buot 2011, 2013), Mount Mayon in Bicol (Buot 2008c), and in Mount Tabunan in Cebu Island, central Philippines (Cadiz and Buot 2011).

We need to make people aware of these shifts of interaction dynamics in Philippine *satoyama* landscapes. Through the Satoyama Online, we hope to contribute to more awareness and education campaign regarding Philippine *satoyama* and reflect on how we can conserve the landscape in our respective communities. These unsustainable practices will indeed endanger the rich megadiversity of the Philippines (Myers et al 2000).

Sound strategies in rehabilitating degraded satoyama landscapes

Obviously, the Philippine *satoyama* landscapes need immediate attention before conditions worsen and become uncontrollable. Two important problems/issues had been identified as main causes of the threats common in Philippine *satoyama* landscapes (Buot and Osumi 2004): 1) upland poverty resulting to overcollection of forest resources and 2) government land policy that for above 18% slope of land, management should be by the government resulting to discouragement, neglect, and unwise use of *satoyama* (Forestry Reform Code of the Philippines, 1975, Prill-Brett 1995), particularly, the Ifugao Rice Terraces. Hence, people are forced to shift to inorganic way and more unsustainable practices in farming to attain a short-term goal of producing much for the increasing needs of the family.

There is an urgent need to address these pressing concerns and the role education, whether formal or non-formal, cannot just be overemphasized. Two education initiatives were done at the University of the Philippines Open University (UPOU), in collaboration with other organizations. One was the Ifugao Satoyama Meister Training Program, a capacity building program among stakeholders of the Ifugao Rice Terraces, led by Kanazawa University in collaboration with Ifugao State University and the UPOU (Serrano et al. 2019). The municipalities of Kiangnan, Hungduan, Banaue, and Mayoyao were chosen localities. Subsequently, stakeholders were identified from these municipalities. The rice terraces in these localities are listed in the UNESCO World Cultural Heritage List and in the FAO Globally Important Agricultural Heritage Systems or GIAHS. There were three phases of the project funded by JICA (Kanazawa) with around 50 graduates per phase. Each trainee was required to have a project as a prerequisite for completion. The trainees present their study results in Ifugao and some in Japan. Now that the JICA funding has ended, the Ifugao State University has sustained the project with funds and resources from the university.

The other initiative was the Youth Capacity Building at the Ifugao Rice Terraces *satoyama* landscape funded by MITSUI Philippines (Buot et al 2020, Buot and Rabena 2020). The main aim was to make the youth aware of the importance of the UNESCO World Cultural Heritage site, to somehow minimize sustained migration of youths to nearby urban centers (Serrano et al. 2019). The project was able to produce online modules and books for the local youths and teachers alike. These two capacity building initiatives, in addition to the Satoyama Online course, were indeed helping in *satoyama* and biodiversity awareness campaign.

The Satoyama Online course as an OOC, was later offered as a Massive Open Online Course or MOOC by the UPOU to further the reach of the education campaign relating to *satoyama* landscape conservation and prevention of extinction of endangered species and landscapes.

At UP Los Baños (UPLB), initiatives to address the problems in *satoyama* landscape degradation, particularly, in the forests over limestone of Samar Island Natural Park (SINP) and in Guiuan Marine Resource Protected Landscape and Seascapes (GMRPLS), both in Samar Island are on-going (Obeña et al.

2021, Villanueva et al. 2021a, Villanueva et al. 2021b, Fernandez et al. 2020, Tolentino et al. 2020). Capacity building is in the form of research webinars and training classes via Zoom (CONserve-KAIGANGAN 2021) dealing with subjects on ecosystem and biodiversity assessment and monitoring among others (Buot 2020). Social transformation is the ultimate goal for all these education initiatives (Alfonso 2014) (Fig.4). Participants are from the different parts of the Philippines and others are from abroad. Everybody is welcome, regardless of age, sex, degree, or occupational background.

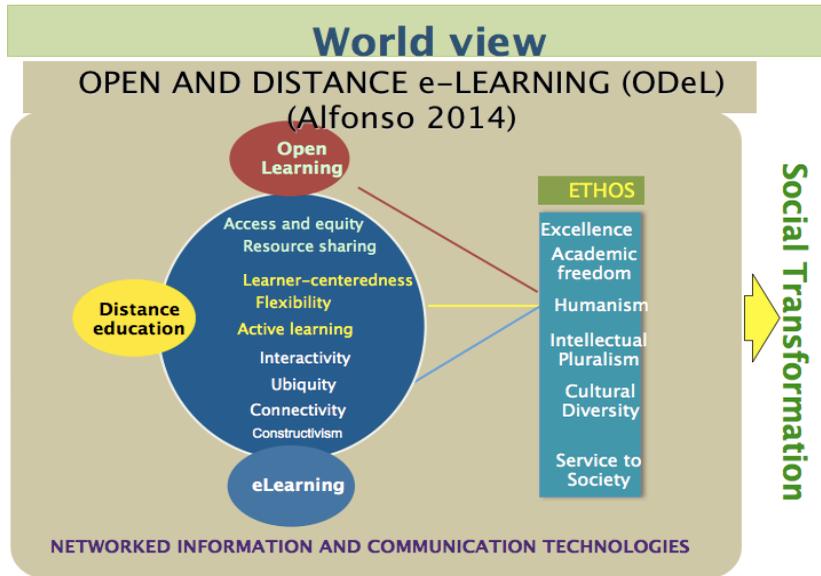


Figure 4. The Open and Distance e-Learning framework and worldview (Alfonso 2014).

In this framework and worldview of Alfonso (2014), the principles of Open Learning, Distance Education and e-Learning converged highlighting learner centeredness, flexibility, and active learning. University ethos of excellence, academic freedom, humanism, intellectual pluralism, cultural diversity, and service to society are seriously considered to attain social transformation. Once social transformation is attained, Philippine megadiversity (Mittermeier et al. 1997) will truly be protected.

SUMMARY AND CONCLUSION

Education in all its forms is still the most powerful tool in social transformation. During this era where internet can reach a vast number of audiences, it would be best to utilize it in education campaign. The Satoyama Online course is fitting, especially with the massive land use conversion and landscape degradation happening in many places. With the transformation of values, and perspectives, conservation of *satoyama* or socioecological production landscapes, will indeed be possible. With the conservation of such landscapes, extinction of rich and unique biodiversity can be prevented as well. Hence, ecosystem services for the human villages will be sustained and sufficient for the cooperative communities.

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