



THE RICE TERRACES OF IFUGAO PROVINCE, NORTHERN PHILIPPINES: CURRENT SCENARIO, GAPS AND FUTURE DIRECTION

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Abstract

The case study was made to identify the drivers of change affecting the rice terraces and obtain information on the current scenarios taking place as an impact of these drivers of change. Data was acquired through key informant interview involving 10 rice terraces farmers. The results disclosed five drivers of change impinging on the integrity of the rice terraces as an agricultural system. The drivers of change are: education, tourism, modern agricultural technologies, Christianity and climate change. Five scenarios are taking place in the rice terraces as the foregone effects of these drivers of change, and these are: vanishing culture, vanishing varieties and breeds, shift in economic activities and outmigration, physical degradation of the rice terraces and urbanization. These drivers of change are either acting singly or in combination with each other to reduce the overall integrity of the rice terraces. Efforts to conserve the rice terraces must address two important gaps/issues, that is: to soften the impacts of these drivers of change and reducing the poverty situation in the rice terraces.

Key words: Rice terraces, Conservation, Drivers of Change, Current Scenario, Gaps, Future Directions.

1. Introduction

Modern society is harvesting the fruit of the labor of many generations of Ifugao's who built the rice terraces. The worldwide recognition of the cultural, economic and environmental values of the rice terraces to humanity are the foregone benefits that society is reaping from what the Ifugao's have done many centuries ago. The rice terraces represent an indigenous agricultural system thus, its management is governed by indigenous systems and institutions. The rice terraces are privately owned parcels and are inherited from past generations. The size of rice terraces clusters owned by families are small ranging from a few hundred square meters seldom reaching half a hectare. Locals plant rice for subsistence purposes only.

The rice terraces occupy an important part in the economy of the area. It ensures the food security of the local inhabitants. It also contains agro-biodiversity and associated resources that underpin the goods and services it provides to the local community and to society as a whole. Local communities depend on these biodiversity for life essentials such as water, food, fuel, fodder, medicine and recreation. The rice terraces also protect watershed and provide water to low lying communities and at the same time pump prime the growth of the tourism industry. In view of their cultural and economic importance to humanity, the rice terraces of Ifugao in the northern central part of the Philippines was declared a World Heritage site by UNESCO in 2005.

For many centuries, the pristine beauty and sustainable nature of the rice terraces have been cited and romanticize in many literatures (Nabalan et al. 2010). However, in recent years the rice terraces had undergone physical and social degradation reducing its value as a cultural heritage. Policy makers at the local and national levels including the international community have noticed these changes and generally agree that there is a need to foster the conservation and development of the rice terraces.

2. Materials and Methods

The study was purely descriptive in nature. It was conducted in Bocos, Banaue, Ifugao, Philippines which is one of the rice terraces cluster declared by UNESCO as a world heritage site. Data was obtained by interviewing ten (10) rice terraces farmers as key informants. The interview was conducted in November of 2011 primarily to identify the drivers of change and obtain information on the current scenarios taking place in the rice terraces. This paper was prepared and presented during the RP-Japan Forum on Globally Important Agricultural Heritage Systems (GIAHS) held on January 14, 2012 at the Ifugao State University, Nayon, Lamut, Ifugao, Philippines.

3. Results and Discussion

3.1 Drivers of change affecting the rice terraces.

There are five current drivers of change influencing the rice terraces of Ifugao: they are education, tourism, modern agricultural technologies, Christianity and climate change. These drivers of change are either acting singly or conspiring with each other to influence the past and present status of the rice terraces (Ngidlo, 2011).

3.1.1 Education

Educated younger generations of Ifugaos refuse to go back to farming the terraces. They prefer to find more lucrative employment in town centers or in the cities. As a result, there is now a continuing scarcity of manpower to maintain the rice terraces. Only the aged segments of the population are left to tend to the terraces.

3.1.2 Tourism

The tourism sector created vast opportunities for alternative sources of income in the hotel, restaurants and in the wood carving and weaving industry. Majority of the maintainers of the rice terraces are engaged in these types of businesses. Cash derived from these businesses far outweigh whatever benefits derived from the rice terraces thus the rice terraces are not taken care of appropriately.

3.1.3 Modern agricultural technologies

Modern agricultural technologies with low productivity and increasing incidence of pest and diseases, farmers are trying to adopt high yielding rice varieties as a substitute to the traditional (*tinawon*) rice varieties. Associated with these new rice varieties is the use of pesticides with far reaching effects on aquatic biodiversity. Modern farming technologies is permeating the rice terraces and replacing traditional farming ones.

3.1.4 Christianity

Christianity is flourishing in every corner of the country and undermining indigenous practices and institutions governing the rice terraces. The core values of these indigenous systems are being questioned by the radical teachings of biblical Christianity. As a result many Ifugao elders who are the repository of these oral traditions are embracing the teachings of Christianity. As a result, there is now a continuing breakdown in the oral transfer of these traditions to the younger generations. There are now attempts to use the formal educational system to create curriculums for the transfer of these traditions to the younger generations.

3.1.5 Climate change

Climate change located at high altitude, climate appear to be one of the primary culprit contributing to crop damages and declining yields. Typhoons, fog, extreme cold weather influence the growth and yield of crops. Surges in rainfall increases flooding depth in the rice terraces causing dike and wall collapse. In some cases too much rainfall causes massive landslides in the rice terraces watershed. Much of the physical degradation in the rice terraces is contributed by excess water.

3.2 Current scenario taking place in the rice terraces

3.2.1 Vanishing culture, vanishing varieties and breeds

The local management of the rice terraces had been influence by culture ingrained in the customary laws based on taboos and customs handed down from one generation to the other. In recent times, most of these taboos and customs are not being respected and have lost their relevance to contemporary Ifugao's. Education and Christianity effectively alienated the Ifugao youth and many Ifugao elders (native priest) from their cultural ways of life. Ifugao elders are supposedly the guardians of age old traditions holding symbolic power and authority for the transfer, observance and preservation of culture. However, as more and more elders yield to the Christian faith, they loss symbolic power and authority weakening their cultural foothold on the transfer, observance and preservation of the rituals and practices associated with the Ifugao way of life (Ngidlo and Ngohayon, 2009). As a result many Ifugao's refrain from practicing ritual sacrifices.

On the other hand, old plant varieties and animal breeds are getting extinct being replaced by new ones. New rice varieties have been used in the rice terraces and have shown promising results of enhancing food and income security of farmers. However, the shift to modern animal breeds such as those associated with backyard piggery are polluting water bodies reducing aquatic biodiversity and rendering these water bodies unsuitable for other uses.

3.2.2 Shift in economic activities and outmigration

Most of the rice terraces farmers are poor and they cannot just depend on the rice terraces for the survival and well-being of their families. The lack of opportunities for agricultural expansion are forcing the local farmers to shift economic activities in the handicraft and weaving industry. Shift in tourist related activities usually delay the cropping season (normally done in January but now moved to April) in the Banaue area delays the planting season by three months thus subjecting crops to unfriendly weather and pest and diseases. The tourism industry is opening up bigger income for those in the business sector but the revenues created by tourism failed to trickle down to the farming sector that sustains the rice terraces. The rice terraces are the lifeblood of the tourism industry but the sustainers of the very source of tourism do no benefit from what tourism generates.

The lack of opportunities for income generation also led to the outmigration of many Ifugao's to other places in search for better economic opportunities. Outmigration created an imbalance between the available manpower and labor requirement of the rice terraces.

3.2.3 Physical degradation of the rice terraces

Almost all the rice terraces clusters in Ifugao had undergone some stages of physical degradation imposed by man and nature. Human neglect and climate change are further aggravating water seepage, landslides, dike collapse and erosion in the rice terraces. Erratic rainfall and giant earthworms are conspiring to destroy the overall physical integrity and productive capacity of the rice terraces. Earthworm infestation is quite extensive among the rice terraces clusters in the municipalities of Hungduan, Banaue, Hingyon, Mayoyao and Kiangan and appears to be spreading to other rice terraces clusters. A comparative study conducted by Gomez and Pacardo (2005) showed that the rice terraces clusters in Banaue are more degraded than those found in Jolongan and Nagacadan, Kiangan, Ifugao. Degradation of the rice terraces is likely to continue unless mechanisms are installed to effectively combat giant earthworms (*Pheretima dharlieinsis*) and mitigate the effects of climate change. Surges in rainfall coupled with the presence of giant earthworms

is causing frequent dike and wall collapse. Most of the collapse dikes and walls in recent years remained unrepaired due to labor and material scarcity.

3.2.4 Urbanization

Some believe that the tourism industry is bringing all the problems in the rice terraces. I would say that the tourism industry does not actually destroy the rice terraces but it is only one of the factors that push the urbanization of the area. The tourism industry brings in the money that fuels the growth and development of the urban system. A case in point is the service sector such as hotels, housing, restaurants and others. As businesses grows, the need for more infrastructure increases. Unfortunately, there are no other convenient spaces for infrastructure expansion except in the rice terraces. The continuing intrusion of infrastructure (in the Banaue area) effectively reduce the spaces devoted to rice production and also reduce the aesthetic value of the rice terraces as a tourist attraction.

4. Gaps and Future Directions

There are certain gaps that must be addressed if efforts to promote the conservation of the rice terraces. First, efforts must help soften the impacts of the various forces that are impinging on the fragile ecological and social fabric of the traditional rice terraces. Secondly, there is a need to transform the rice terraces into profit centres to regain the interest of farmers in tending the rice terraces. In doing this, the pitfall of romanticizing the various issues and problems besetting the rice terraces must be avoided. Conservation must be translated into practical, doable programs and projects that will lead to a better income, food security and environmental stability.

The primary task of conservation is that of attaining two important objectives: that of improving the bio-physical health of the rice terraces and solving the incipient poverty situation in the area. In line with this, the following recommendations are forwarded for any future undertakings.

4.1 Organization and Institution Building

There is indeed a need for local farmers to be organized into one cohesive unit to empower them to do conservation work. Although policies/programs can be adopted to deal with individual farmers and their families, it would be much more beneficial to have an active umbrella organization within the rice terraces clusters. The umbrella organization should be at the core of development efforts where any form of assistance can be channeled through. The loose nature of the rice terraces is a disincentive to development which requires a more organized control.

4.2 Development of a co-management scheme for the conservation of the rice terraces

There are no easy solutions to the various issues plaguing the rice terraces. A case in point is outmigration and labor scarcity. People cannot be compelled to stay when they see no opportunity to get income and the prospect for a better way of life. Since the rice terraces can no longer depend on family labor and other organized self-help mechanisms, there is a need to develop a scheme for the co-management of the rice terraces. Government should take a bold step to engage all stakeholders to formulate a cost sharing agreements among stakeholders from government, tourists, business sector and local famers to pay for the cost of conservation. In view of the apparent financial incapacity of some rice terraces owners to maintain the rice terraces, the Local Government Unit (LGU) of the area should help formulate a green revenue collection scheme to generate funds for investment in the conservation of the rice terraces. If this is not possible, the LGU can integrate in its annual budget a green fund to help farmers repair damage portions of the rice terraces. Although the rice terraces are considered private properties, government should make themselves available as key partners in the development of the rice terraces.

4.3 Delineation of specific community landscape units

The community landscape unit resemble a community zoning plan where the extent of forest, rice terraces and other production units are defined and delineated. This will help minimize random use of land and other resources and contain the intrusion of infrastructures within the rice terraces. This activity has urgency especially in the Banaue area where urbanization is swallowing up the rice terraces. Of course an effective zoning policy can only work with strong policy and legal support system from the community, municipal and provincial levels of government.

4.4 Market Oriented Entrepreneurship (MOE)

Again, the contemporary situation in the rice terraces does not cater to income, food security and a better way of life. To depend solely on the rice terraces would mean that farmers have to live on subsistence or below subsistence level. This explains the reason why many Ifugao's are migrating to other provinces in search for greener pastures. The province of Ifugao used to be a net importer of lowland rice. At the core of the various issues confronting the rice terraces is poverty and the challenge is to set up market oriented entrepreneurship to transform the once subsistence economy into profit centers without necessarily destroying the rice terraces environment. Farmers must go beyond subsistence production with surplus to earn additional income.

To infuse MOE in the rice terraces, upfront investments are necessary for local farmers to improve agricultural production and create other alternative sources of income. Upfront investment may include a combination of instruments such as loans, grants, risk guarantees and payment for environmental services. Farmers capable of capturing the financial value of goods and services from their rice terraces are in a better position to initiate alternative options for the long term conservation of the rice terraces.

4.5 Research and Development

There is a need for more on-site research programs to generate reliable information on the various problems affecting the rice terraces. For the moment we do not have yet enough technical information on the impacts of new rice

varieties on soil and ecology. Neither any reliable documentation was ever done to compare yields and productivity of new and old varieties. The giant earthworms are inflicting a great deal of harm to the rice terraces and until now it is still a continuing research and development agenda. As of today, no concrete remedy has been found yet to finally address the earthworm menace.

A long-term improvement or breeding program for the native rice varieties is also necessary to develop better genotypes. In spite of its superior aroma and eating characteristic, farmers are refusing to cultivate them due to their low yield and late maturing characteristics.

5. Conclusion

Traditional agricultural systems flourish in many parts of the world and most of them are beset with similar issues and problems. Interestingly, there is now heightened interest in the conservation of traditional landscapes around the world in view of their significant contribution to national development in countries where they are found. Another important reason for this renewed interest on traditional systems is the wealth of knowledge and experiences stored in these traditional agricultural landscapes which can be copied for sustainable development and climate change mitigation. This paper was prepared to foster information and knowledge exchanges among various stakeholders of traditional landscapes around the world.

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