

CHAPTER 4

HOUSEHOLD LIVELIHOOD STRATEGIES OF THE INTHA

Since the idea of livelihood is concerned with both environmental influence on human life and human influences on the environment, environmental stability plays a crucial role in the creation of sustainable livelihoods. Environmental degradation often poses difficulties for the poor, because most of them depend on natural resources for their livelihoods and lack alternative livelihood options. In the context of the Intha group in Myanmar, they primarily rely on Inle Lake for their livelihoods, so are facing significant challenges as the lake's environmental conditions degrade.

Like other lakes across the world, Inle Lake today is threatened environmentally by various factors. Water pollution, water level decline and shrinkage of the open water surface area of the lake are its key environmental problems. A reasonable level of water is a basic environmental pre-condition for the carrying out of floating gardening - the main livelihood activity of the Intha; therefore, water level decline, plus other forms of environmental degradation, is creating challenges for the Intha nowadays.

Inle Lake is a common pool resource, but a lack of interconnection among users has led to environmental deterioration of the lake. Those whose livelihoods mainly rely on the lake's ecosystems have become victims of the environmental degradation taking place there; hence, to meet their livelihood security requirements, the Intha have tried to diversify their livelihoods in a number of ways, in accordance with the livelihood capitals they possess.

Agrawal (2008) classifies basic livelihood coping and adaptation strategies into a set of four analytical types: mobility, storage, diversification and communal pooling.

Mobility is possibly the most common natural response when environmental risks arise, and people take this option in order to secure a better situation.

Storage controls the risks experienced over time, and is an effective measure against even complete livelihood failure at a given point in time, if there is well

constructed infrastructure in place, low levels of perishability and high levels of coordination across households and social groups.

Diversification diminishes risks across assets owned by households or collectives, and depends on the presence of both productive and non-assets, consumption strategies and employment opportunities. This strategy is reliable when the benefits flowing from assets are subject to risks, and these risks have different impacts on the benefit streams coming from these different assets (Agrawal, 2008).

Communal pooling refers to adaptation responses involving joint ownership of assets and resources; the sharing of wealth, labor or incomes within a group or a community, or use of resources that are held collectively during times of shortage. This approach eliminates the risks experienced by different households, and is useful when people cannot cope individually with changing environmental risk (ibid.).

Exchange is perhaps the most flexible of adaptation responses, and is normally recognized as a means to promote specialization and increase revenue flows. However, it can also replace the first four classes of strategy and reduce risk when the poor have access to markets. As a means to reduce risks, it can work together with high levels of specialization and institutionalization among exchange relations. An example of this approach is buying insurance to cover the risk of crop failure. Resorting to exchange or promoting exchange-based adaptation methods to address climate risks is; however, risky, given the highly unequal access to markets across different social groups, especially those who are in marginalized situations (ibid.).

To follow the ideas of Blaikie et al. (1994) and Chamber and Conway (1992), the vital resources needed in order to sustain livelihood are human, natural, physical, financial and social capitals. Human capital includes labor, plus skills, experience, knowledge, creativity and inventiveness. Land, water, forests, pasture and minerals are contained in natural capital, while physical capitals include food stocks, livestock, jewelry, equipment, tools and machinery. Financial capital concerns money in a savings account at the bank, or even in an old sock; a loan or credit. The quality of relations among people; for example, whether one can count on support from family members, or on mutual assistance among neighbors, is social capital.

4.1 Structural Background of the Intha

In Myanmar, the Intha are very famous because of their leg-rowing style and their mythical housing style – with houses set on the water. In this section, I will give a brief history of the Intha - their beliefs, norms, social institutions and their background, in order to provide a better understanding of their context.

Concerning the origins of the Intha, there are three interpretations. The first view is that they came from the Dawei area, while the second view is that they came from ancient Bagan after the Bagan period. The third line of thought is that they are one among a group of Tibeto-Burmans who came from north.

For the first view, then according to Nyaung Shwe history, when Si Sai Sawphwar – a Shan chief - ruled, there were wars between Myanmar and Thailand in the Dawei area. Two brothers, Nga Htaung and Nga Naung, who had been displaced from Dawei, came and served the Shan chief. When these brothers saw the lake, they liked the environment there and they contacted their relatives from Dawei and asked them to settle there. At that time, 36 households from Dawei moved to the lake. Later, the population increased and they built four new villages, and based on these four villages, the lake was named Inle Lake, because in the Myanmar language, the pronunciation of the word four is *le* or *lay* and lake is *in*. From that time onward, these villages were called ‘Inle’ villages, meaning the four villages on the lake. In the Myanmar language, *tha* means people or sons, so the people who live by the lake are called the Intha (Director Myint Maung Maung, 1984).

In *Pyin Nyar Padaythar* Magazine (1968), although the origin of the Intha people is not known exactly, it is said that they moved from the Dawei area. When Alaung Sithu, the King of Bagan, visited Inle Lake, there were two servants, Nga Htaung and Nga Naung from Dawei who went with him and when they saw the lake, asked the Shan chief if they could stay in the area. When the Shan chief allowed them, they called for their relatives from Dawei and asked them to settle there also, which they did, forming 36 households at first. In Volume 15 of the Myanmar Encyclopedia, it states that the Intha live on Inle Lake and are believed to have moved from the Dawei area in the sixth century ago (ibid.).

Under the second interpretation, since Nga Haung and Nga Naung came along with the Bagan King, Aloung Sithu, some believe that the Intha are from ancient Bagan (ibid.).

The last interpretation is that of Dr. Than Htun, a famous historian in Myanmar. In his book, *Khit Haung Myanmar Yarzawin* (pp. 24-25) he states that the Intha were one of six Tibeto-Burman groups who moved from the north in the late ninth century. While the other groups moved to the central dry zone of Myanmar, the Intha did not join them and stayed in the Inle Lake area. Later, they *became* known as the Intha (ibid.).

According to U Min Naing (1960, cited in Director Myint Maung Maung, 1984), the Dawei, Myeit, Intha, Rakhine and Bamar speak the same language, wear similar clothes and have the same body structure and complexions, so it is said that these groups are descended from same group (ibid.).

The Intha are staunch Buddhists, and Buddhist ideology plays a very important role in their daily life. Even in the houses of poorer people, they worship Buddha, give flowers and make their shrines very beautiful; they pay a lot of respect and attention to Buddhism. In the morning, they worship with rice and curry before they have their lunch, then when night falls, they worship Buddha with joss sticks and drinking water, then they say prayers before going to bed.

The Intha are very hospitable and they enjoy having many guests in their homes. Although each village has a village head, the abbot of the village monastery is the symbolic leader of the village. Almost all the villagers pay their respects to the abbot and obey what he says. During Buddhist lent, the fishers do not go fishing on Sabbath days, instead they go to monastery and observe the eight or nine Buddhist precepts. If their economic situation allows, they are eager to make a donation or hold a novice ordination ceremony. Examining the number of donations given in the village helps indicate whether the livelihood situation is good or not in a given year.

The main livelihood activities of the Intha are floating gardening (hydroponics farming) and fishing, and the main livelihood among these two depends on their social networks, kinship ties, labor availability and financial condition. In one village, those who have enough money have bought motor boats and engage in tourism among local pilgrims who are from other areas of Myanmar. To operate in the local

tourism industry, nearly half the households from the village have bought motorboats and motor bikes, and some have bought mobile phones. Other livelihood activities include running small-scale fishing operations, trading, home gardening and seasonal gardening, according to the capital needed to carry them out.

To investigate the livelihoods of the Intha, I conducted my field data collection activities in Lwe Nyeint Village, which is situated in the northwest part of the lake. The village is located in the lake area, and is close to its banks, making it easy to access the road there. According to the elders I spoke to, Lwe Nyeint village was built more than 200 years ago, but there is no historical documentation to support this. There are 127 households and 608 people in the village (300 male and 308 female). Among these, 60 households own floating gardens, while the others work as wage laborers within the floating agriculture sector. Therefore, floating gardening is the main livelihood activity among the villagers of Lwe Nyeint village.

Table 4.1 Demographic Profile of Lwe Nyeint Village

1.	No. of households	127
2.	Population	608
3.	No. of males	300
4.	No. of females	308

Source: Field Survey, 2011

Like other villages around Inle Lake, their main livelihood activities are floating gardening and fishing, though some are also engaged in local tourism and some make traditional snacks at home and sell them at the five-day market. Very few households are fish dealers.

In Lwe Nyeint Village, there is a youth organization and the members are younger people in the village. This organization is not formal, but a kind of local

group. During donation ceremonies, weddings and funerals, members of this group attend and provide facilities such as maps, cooking pots and dishes for eating, and services such as invitations, the reception, and the waiters and waitresses, plus cleaning. They provide these facilities and services free of charge. However, the host donates some money to this group as a way of saying 'thank you'. This group uses the money earned to buy more dishes, maps and other items. In some cases, the money they earn is donated during the village donation ceremony at the monastery. This is a kind of traditional organization.

Table 4.2 Livelihood Activities in Lwe Nyeint Village

No.	Livelihood Activity	No. of Households
1.	Floating gardener	60
2.	Motor boat owner	55
3.	Fisher	43
4.	Five-day market seller	7
5.	Traditional snack maker	15
6.	Fish dealer	5

Source: Field Survey, 2011.

In their daily lives, reciprocity is fundamental. If one couple gets married and holds a reception, some people support with materials that are of use for a new couple, while others give money. In terms of reciprocity, when another couple gets married, it will provide the household with presents and money back. Like in other areas of Myanmar, these kinds of goodwill gesture can be found in the Inle Lake area,

not only in the case of weddings but also during religious ceremonies. Reciprocity is a traditional custom among the Intha. If one family initiates a novice ceremony, the relatives and friends contribute a donation in the form of presents or money according to their status. This means the host does not have to spend a lot of money on the ceremony. Throughout their lives, the Intha contribute a lot to each other in this way, as it represents a kind of good deed and a kind of saving.

In Lwe Nyeint Village, they established a community forest (CF) in 2004, with the cooperation of the Forest Department. The CF area is 600 acres and is situated to the west of the village, at the bottom of the mountain. Prior to 2004 this forest area had become degraded due to fire wood collection, but in 2004 the villagers made a nursery for the CF with technical assistance from the Forest Department. Since the establishment of the CF, the trees inside this area have been protected from being felled. All households in the village are members of the CF User Group, and so far no one has cut there. This forest is now somewhat dense, so they hope to thin it out over the next few years. From the thinning operation, they will be able to sell poles and posts to the other villages, the proceeds of which will go towards the village fund.

According to the Community Forest Instruction (1995), the duration of the land lease for the establishment of a CF is initially set at 30 years. After 30 years, the District Forest Officer will, with the approval of the Director General of the Forest Department, determine whether or not to extend the lease, depending on the performance and the desire of the users' group.

In line with the guidelines, the 'Exploitation of Forest Products from Community Forests', (i) the users' group can exploit the forest products from the community forest in accordance with the management plan, (ii) no taxes shall be levied on the users' group or members of the users' group concerning the forest products exploited for personal use, (iii) surplus forest products can be sold to non-members of the village at reasonable prices, (iv) taxation shall be exempted from the sale of these products, (v) the users' group can market the surplus forest products to areas outside the village. (vi) for marketing of the forest products to areas outside the village, tax shall be levied by the Forest Department at specified rates, (vii) the users' group will use the incomes mainly for the implementation of the management plan and for the development of the Community Forest, and (viii) surplus incomes can be

used only for social welfare and economic development of members of the users' group in line with the wishes of the members. According to Community Forest Instruction (1995), the users' group can utilize the forest products from the Community Forest and the surplus cash generated to develop business enterprises that produce value added products.

Over the medium term, the village CF has been able to provide financial assistance for the villagers' livelihoods; moreover, the villagers have enhanced the communal pool to use on other activities such as lake environmental conservation measures - to increase the life span of Inle Lake, which represents their life-support system.

In the long run, this local institution will be fundamental to the environmental conservation of the area through the use of communal pooling. This village level organization, as well as the UNDP, is helping villagers by supporting them with their financial capital requirements to some extent. This financial support will help the households diversify their livelihoods and cope with their changing environment.

The Intha's leg-rowing style, their houses on the water and their wonderful floating agriculture are all very famous, and Inle Lake is an attractive tourist destination, not only because of the lake itself, but also because of its local ethnic people, the Intha. In their local context, they have their own history, their traditional beliefs and organization; their norms and their livelihood strategies.

4.2 Differentiating Household Livelihood Strategies

Individual households construct their livelihood strategies according to their socio-economic level, and the main livelihood activity of almost all the villagers in the study area is floating gardening. In fact, most are the owners of floating gardens while some are wage laborers in the floating garden industry.

These gardeners now use hybrid varieties and use a lot of agro-chemicals in order to achieve a high yield, meaning these inputs are important in the floating gardening business. People spend a lot of money on seeds, fertilizers, pesticides, insecticides and fungicides, while for labor, the daily rates they pay to the laborers are more than they are on land. On land, the wage for a female laborer is 1500 Kyats and for a man, 2000 Kyats per day. However, in the floating gardening trade, the wages

are 2000 Kyats for a woman and 2500 Kyats for a man per day. In some villages, the wage for a male laborer is 3000 Kyats for one day. The reason why the wages are higher for the floating gardens than on land is because they have to put in a greater amount of effort on water; moreover, the laborers need to take their boats out to the gardens, because they cannot work without a boat. If they do not take their boat, they get 500 Kyats less than the current wage. Traditionally, the gardeners provided lunch to the laborers, but nowadays, the gardeners do not want to do this, so they pay extra and the laborers take their own lunch to the place of work. During the growing season, the wage laborers cannot be hired without first giving several days notice; hence, most of the gardeners ask the laborers to work in their gardens for the whole growing season.

During my field data collection exercise, I conducted a questionnaire survey across 60 households in Lwe Nyeint Village. According to the returned questionnaires, the socio-economic statuses of the 60 households are as follows.

Table 4.3 Economic Status of Households in Lwe Nyeint Village

Socio-economic Status of Household	Number of Households	Percentage	Remarks
Better-Off Household	5	8.33	More than one motor boat; floating garden (>500 <i>lan</i>); house in good condition; home garden
Middle-Income Household	24	40	One motorboat; floating garden (300-500 <i>lan</i>)
Poor Household	31	51.67	No motorboat; floating garden (<300 <i>lan</i>); wage laborer
Total	60	100	

Source: Field Survey, 2011.

Table 4.4 Education Status of Household Heads in Lwe Nyeint Village

Education/Socio-Economic Status	Primary	Middle	High	Higher	Total
Better-off	2	2		1	5
Middle-income	16	7	1		24
Poor	23	8			31
Total	41	17	1	1	60

Source: Field Survey, 2011.

Among the 60 surveyed households, there are five better-off households (8.33%), 24 middle-income households (40%) and 31 poor households (51.67%).

Here, I have defined the households according to their housing situation, the area of floating garden they own, the number of motor boats they have and their income levels. Those who own more than one motor boat, more than 500 *lan* of floating gardens, have a house in good condition and a high income, I have put in the better-off group. Those with one motor boat, between 300 and 500 *lan* of floating gardens and a house in a good condition I describe as middle-income households. The poor households are those whose floating garden area is small, who have no motor boat and a low income.

Those who have enough labor for their gardens, meaning they do not need to ask others for help, practice reciprocity. Mostly, relatives work for each other and this can be seen as a local custom in the Inle Lake area. Even those who are not relatives can work together in a reciprocity arrangement. So, if one person works as a laborer in another's garden, the other person is employed in return according to the number of days they have each worked. In this way, the gardeners do not need to pay for wage laborers, saving a certain amount of money. To pay wages is not easy for the gardeners, as market conditions are not secure and so the gardeners want to save as much money as they can. Hence, the custom of reciprocity is very important in their daily lives.

In terms of the financial inputs required for floating agriculture, a few people, those who are better off, can invest their own money. For example, those who have some gold can place it in the hands of their better-off relatives in return for a loan. Some people keep pigs throughout the year and sell them when the growing season begins. Some gardeners save money from fishing and they use this money to cover their floating gardening expenses, while others save their profits from their tomato farming. The poor have to take a loan from middlemen in Nyaung Shthey, then they repay in the form of tomatoes as credit. In such cases, they cannot sell their tomatoes to others; they have to sell to the middleman who lent them the money. Their crops may be bought at a lower price than those who sell at the market rate. The middlemen's profits depend on the price of tomatoes, because they can get back their money back if the price is high; however, if the price is low and the gardeners lose their capital, the middlemen cannot get back their capital that same year. Although they can get back their money, their profits may not be as good as in a year with a high price.

In general, if a farmer grows a seasonal crop early or very late, he may have a better chance of gaining a profit; however, at these times the crops are more likely to be affected by pests and diseases, because the weather and environmental conditions may not be ideal. However, if a gardener grows in the peak season, he may not be able to maximize the profit he gets because almost all the gardeners grow and harvest their crops at this time, meaning the price is lower on the market. The point here is that insecure market conditions have shaped the profit levels of the gardeners

Unlike other jobs, all stages of the floating gardening process are carried out by men. Other agricultural practices may be done with the help of animals or machines, so human labor is critically important with floating gardening. The profits from floating gardening depend, not only on the price of the crops, but also on the availability of labor in the household. For instance, if two households practice floating gardening in the same area, they may have a larger labor force to call on, and be able to make more profit, because they do not need to spend as much as another household. If the price of the crop drops, the first household will not lose financial capital as much as the second.

All levels of households in the village practice floating gardening, but the area belonging to each household varies by household level. The better-off households own larger garden areas than the middle-income households, who in turn own more than the poor. Floating gardening is the main livelihood activity for the villagers, and after that comes fishing, which is the main source of income and food for the middle-income and poor households. Although most of the fish dealers in the village are from the better-off households, there is one middle-income household where the man works as a fisher dealer. The five-day market sellers are from all types of households, but what they sell varies. Mostly fish are sold at the five-day market, while others sell vegetables and traditional snacks. The motor boat owners are from the better-off and middle-income households, but the number of motor boats owned by the better-off households is higher. The motor boat drivers are mostly from the poor households, as are the wage laborers.

In Lwe Nyeint Village, among the 60 surveyed households, their livelihood strategies vary according to their socio-economic levels, as shown in Table 4.5.

Table 4.5 Status of Households According to Socio-economic Level in Lwe Nyeint Village before 2010

Socio-economic Status	Floating Gardener	Fisher	Fish Dealer	Five-day Market Seller	Tourism		Wage Laborer	Total
					Motor Boat Owner	Motor Boat Driver		
Better-off (5 HHs)	5	-	-	3	5	-	-	13
Middle-income (24 HHs)	19	11	1	2	12	1	-	46
Poor (31 HHs)	26	22	-	8	-	7	4	67
	50	33	1	13	17	8	4	126

Source: Field Survey, 2011.

Within floating gardening, the better-off households mainly use their financial capital for inputs at all stages. They use wage labor in their gardens and use their own

money to buy material inputs such as seeds, pesticides, insecticides and fertilizers. As they have other sources of income, they can easily invest in their floating gardening activities. For the middle-income households, those who have a labor force practice reciprocity in their gardens, but for those who do not have labor available, they have to hire labor. Poor households mainly use their own labor, because they do not have enough capital to hire labor and their gardens are not big like the better-off households. For material inputs, some of the middle-income households use their own money, while others use a mix of their own money and also borrow from relatives or brokers. Most of the poor households borrow money for their material inputs and when their crops are being harvested. They then repay the debt with their crops. Some poor households do not borrow money, as they have savings from their fishing activities. In addition, they do not need to invest much money in their gardens, as they are small.

The middle-income and poor households depend mainly on fishing before and after the floating garden period, but during the floating garden period, they spend most of their time in the garden and go fishing only when there is no work in the garden. Fishing not only brings-in their daily food requirements and earns extra income; it also provides financial capital for their floating gardens. Some households save the money they make from fishing and use it to buy seeds, agrochemicals and wage labor. The fish catch per day is not big - just one or two vises - but it is not a difficult job. Although they do not make a lot of money, they can go fishing almost every day and can catch enough fish for at least their household consumption. The fish catch also depends on the skills of the fishers and the fishing gear used. Some people who are not good at fishing do not fish. The type and amount of fishing gear used also impacts upon the fish catch. If the fishers use longer fishing nets, they can catch more fish; however, some cannot afford to buy longer fishing nets, so use fishing hooks, meaning they cannot catch as many fish.

Some in the tourism industry provide a motor boat service to local pilgrims, traveling from their village to Phaung Daw Oo Pagoda. This famous pagoda is situated in the southern part of the lake, so when the pilgrims arrive, they need to take a motor boat to get there. In Lwe Nyeint village, a motor boat service has become popular over the last five years. Prior to that, some people acted as motor boat service

providers, but at that time, although some of the better-off and middle-income households had motor boats, they did not use them for tourism, they were used to deal fish and manage their floating gardens. In the local tourism sector, some motor boat owners drive their own motor boats and some hire drivers. Some owners wait for visitors at the highway junction, ten miles far from their village, in order to negotiate with visitors getting off the bus, while their drivers wait at the village jetty. The fee paid to for the motor boat drivers is based on the number of trips made, rather than a flat rate.

Table 4.6 Livelihood Strategies According to Socio-economic Status in Lwe Nyeint Village, before 2010

Socio-economic Status	Livelihood Strategy				Total
	Environment-Dependent (Floating Gardening)	Market-Oriented (Fish Dealer; Five-day market Seller)	Outsider-Dependent (Motorboat Owner - Tourism)	Labor-Oriented (Fishing, Motorboat Driver, Wage Laborer)	
Better-off (5 HHs)	5	3	5	-	13
Middle-income (24 HHs)	19	3	12	12	46
Poor (31 HHs)	26	8	-	33	67
Total	50	14	17	45	126

Source: Field Survey, 2011.

The livelihood strategies of the local people vary according to their socio-economic backgrounds. When analyzing their strategies, the better-off households make a living in three ways, namely by using an environment-dependent strategy, a market-oriented strategy and an outsider-dependent strategy. They have no labor-oriented strategy. They have a lot of natural, physical and financial capital, and some

have good social capital also, and so can transform their financial capital into labor. For the middle-income households, about 50% use a labor-oriented strategy while other types of strategy are running. In the case of the poor households, almost all of them are labor-oriented. As they are lack financial and physical capital, they make their living as motor boat drivers in the tourism sector and as wage laborers in the floating gardening sector. They do not own a motor boat and do not need to negotiate with outsiders; they are just laborers and their incomes are very low.

Aung Kyaw Myo, who is 23 years-old and a member of a better-off household, told me that while they grow tomatoes on the floating islands, they get financial capital from two key sources. This first source is from a shop his father runs at the five day markets, from which he sells fish from the lake. He runs a shop at Aung Pan market because some of his relatives live in that town, so they can sell materials in their relatives' houses. Sometimes, they borrow money from their relatives, in times of need. Another source of money for their floating garden business comes from a motor boat service, which the father drives himself. When they practice floating agriculture, the motor boat service is not a major source of income – it is just run to earn money to buy inputs for the floating gardens.

In short, different households use different strategies for their livelihoods, and these vary according to their economic background. Most of them are environment-dependent, while some are good at negotiating with outsiders, especially the visitors or local tourists. Within their village social structure, social relationships between households play an important role in their strategies, as does the availability of labor for the middle-income and poor households. This is why the Intha of Lwe Nyeint Village have chosen different livelihood strategies.

4.3 Challenges for Households with their Livelihood Strategies

As different households have different strategies, they face different challenges in their livelihoods. The availability of labor, environmental degradation, market conditions and dealing with outsiders or visitors are some of challenges faced by the households in Lwe Nyeint Village.

For the better-off households, environmental degradation is the main challenge, for however much they put money and labor into their floating gardens,

they will not succeed if the water level is too low. In the 2010 growing season, the water level in Inle Lake reached its lowest on record, and most of the floating gardens could not be sustained. **U Mya Maung** is the head of a better-off household, and has been practicing floating gardening his whole life. It is his family's only livelihood source. Looking at their house and their home decorations, his is one of the better-off families in the village. There are four members of the family, but the household head is only one who can work, as his wife works for another household and his brother-in-law is older than working age. Moreover, they have an adopted son, but he is still a primary school student. On the whole, they are poor in terms of a labor force and have to invest a lot of money in their floating garden business when compared to other households. When the market conditions and environment around the lake were good, they made a good return. At that time, in the wet season tomatoes were grown only around Inle Lake, and the Intha could make a good profit. However, in recent years, wet season tomato growing has become somewhat popular in other regions of the country, meaning the market conditions are not as stable as they once were, and it is not certain they will be able to make a profit. Moreover, the environmental conditions have deteriorated a lot in recent years. To sum up, it can be said that at present they face many uncertainties with their floating garden businesses, their main livelihood source.

In the 2009 growing season, the environment favored them and they tried their best with their garden; however, the price of tomatoes changed a lot, so that gardeners who grew early in that year got a good price for their crop, while those who grew late received a low price.

In that year, U Mya Maung grew very early and made a good profit. That year, they held a novice ordination ceremony, or *shinbyu* in Burmese, for their adopted son, according to Buddhist tradition. All of their relatives and friends were invited to the ceremony and they donated items and offered breakfast and lunch to the monks. All of their guests enjoyed traditional food and snacks.

However, in the 2010 growing season, along with other gardeners they lost their capital in terms of labor and money, due to the low water level in the lake. When compared to others, his family lost more money as they do not have a labor force. In 2011, they grew tomatoes with the hope of repaying some of the credit lost in 2010;

however, yet again it was in vain because of the environmental conditions and they were caught in a debt trap. As a result, they sold their gold and even the engine used to generate electricity. They also left their motor boat in the hands of a relative in order to raise a loan. In their village, if one person keeps a motor boat as part of a loan arrangement, and he uses the boat, the borrowers do not have to pay interest. If the money lender does not use the boat and keeps it inside, the borrower has to pay interest. In my informant's case, the money lender used their motor boat and so they did not need to pay any interest on the loan. In spite of the difficulties they face, they are still eager to grow tomatoes in the future. Sometime, the household head goes fishing for household consumption and works in their garden the coming season. Their life is full of both enjoyment and difficulties - as floating gardeners struggling with uncertainty.

Not only environmental uncertainties, but also financial inputs and labor availability are challenges for the middle-income households. **Sayar Aye's** household belongs to the middle-income group in the village, and he is a former village head. In the summer of 2010, they lost their capital in term of both money and labor in their floating gardening enterprise. Then, they could not grow in the summer of 2011 because of the declining water level, so they received no income from floating gardening that year.

Growing vegetables on the floating islands is more costly than on land, for to work on the floating gardens, one must have at least a small boat. Without a boat, even moving from one place to another on the lake is impossible. As a result, floating gardeners have to spend 2000 Kyats on each laborer and 500 Kyats for his boat per day. On land, it cost only 1500 Kyats per day for wage labor. Also, the work able to be done by a laborer on the floating gardens is less than on land, so it is necessary to put about three times the amount of moneys into labor for the floating gardens as for agricultural activities on land. Moreover, the instability of the environmental situation and uncertainty of the market conditions (crop prices) makes it difficult for floating gardeners to survive today.

During the off-season for floating gardening, they grow seasonal crops on the land in another area that was once a floating garden, but is now land due to the decline in the lake's water level. Here they grow cabbages, gourds, cauliflowers, flowers and

other vegetables, then on market days go to the market and sell what they have harvested the previous days. Moreover, they are able to generate an income from their motor boat, as their son-in-law runs a local tourism business and so needs a motor boat. However, they do not make as much income as others, because they do not normally do this job. Through such methods the family can survive while not practicing floating gardening.

As of writing this paper, the summer of 2012 may be favorable for growing tomatoes on the floating islands; however, being an old couple, they cannot work as hard as they did before, so will need to hire wage laborers, which will cost much more money than it did before. Previously, their daughters worked on the floating gardens, but now they are married and cannot work. If they practice floating gardening in the coming season, it will cost a lot for weeding and cleaning the floating islands, as they did not grow last year. Also, they will need to buy a lot of bamboo to fix the floating islands into position and for scaffolding, as they could not recover the bamboos from their floating garden in 2010, as the water level was too low to bring the gardens in, so the bamboo perished. For those reasons, when I spoke to them, they had not yet decided whether to practice floating gardening in the 2012 growing season.

U San Hla's household is in the middle-income group and he lost his capital in 2010 due to the water level decline. When the time came for the tomato plants to flower, the water level had declined so much there was not enough water in the gardens to row the boats. As a result, they had to spray pesticides from far away, so some of the plants died and some were submerged when the water level rose again. As a result, they had to abandon the garden and lost a lot of moneys and labor. In that year, they had to sell some of their gold in order to repay the credit they had taken from a middleman, plus they asked some relatives to lend them money.

Insecure market conditions are a challenge, especially during a period of environmental uncertainty. The main livelihood of **U Yay**'s household, a middle-income one, was floating gardening until last year, after they had lost their capital investment about three years in a row on their floating gardens. In the growing season of 2009, the environmental conditions favored growing tomatoes, the plant grew well as usual; they worked hard in the garden with a lot of hope for a good harvest. However, market conditions that year were unstable, with those who grew early

making a profit and those who grew late losing their capital investment. Unfortunately, when it was time for U Yay's household to harvest the crops, the market had taken a turn for the worse and the price of tomatoes had already fallen to a very low level, and he lost a lot of money.

During the next growing season, in the summer of 2010, the water level in the lake reached its lowest level in living memory, and as a consequence, the water in his family's garden dried-up and the floating islands anchored themselves to the bottom of the lake. As a result, they could not use their boats in the garden and had to work very hard in the mud, leaving them very tired both physically and mentally. By the time the crops were ready to be harvested, the water level had risen very quickly as rain fell, meaning that all the floating islands on which the tomatoes were growing were completely submerged under the water. Some islands appeared on the surface of the water after a few days, while others died and decayed in-situ. As a result, all the family's tomato plants died before they could be harvested, and all their efforts were in vain. To make it worse, one of U Yay's sons - who now works as a motor boat driver - fell sick due to fatigue. Then in 2011, they grew tomatoes on some islands with just a little hope of repaying some of the debt from before; however, yet again they could not harvest the crops because the water level was very low and they could neither row their boats nor walk in the garden. In the end they had to leave the plants, so yet again lost money, though less than before.

Negotiating with potential customers is a challenge for those who own a motor boat. To get visitors to use their boat, being able to negotiate is a key ability, and although some are good at this, others are not and do not like to connect with outsiders. After their floating gardening activities failed due to the environmental situation, Aung Kyaw Myo's household started to earn their main income from tourism. However, he is not good at and does not like negotiating with visitors, though some visitors are good-natured and it is easy to deal with them. Some are not so good-natured and it is difficult to negotiate with them; it is also difficult to deal with strangers over issues related to money. To sum up, he does not really want to deal with visitors at all, and when practicing floating gardening, did not have to.

For the poor households, their skills are fundamentally related to fishing and driving motor boats on the lake. If they are not skilled at these activities, they face

difficulties sustaining their livelihoods. U Kyaw Win's family is poor and their only livelihood source was floating gardening until 2010. As the environmental conditions worsened, he became a motor boat driver, but he is not so skilled at this, so he has a young man assist him. This means he has to share his income with his assistant and cannot buy everything he needs. In addition, when he goes fishing, he cannot catch as many fish as others because he is not so good at fishing either. So for him, his lack of skill at driving a motor boat and at fishing pose a challenge, although he is good at floating gardening.

To sum up, all the households are facing a variety of challenges due to environmental degradation and poor market conditions for their floating gardens. As well as these challenges, some do not have negotiation skills when dealing with outsiders in the tourism sector, nor are they skilled at fishing, or doing other jobs. These are just some of the challenges currently facing the study villagers within their livelihood activities.

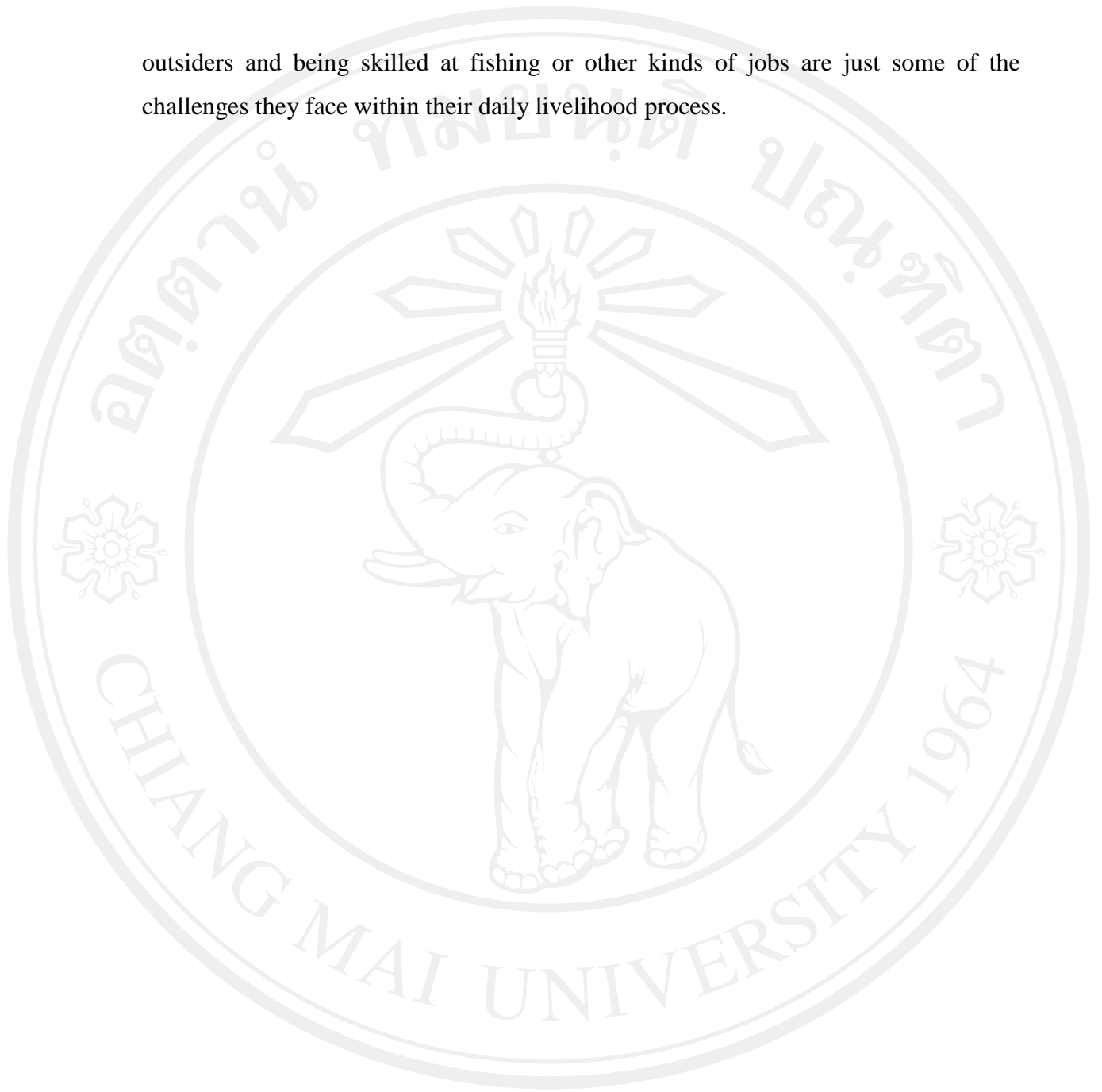
4.4 Summary

The legendary ethnic group whose houses float on water, who row their boats using one leg and who grow on the water, is the Intha group from Myanmar. Every year, many tourists visit Inle Lake due to its scenic, environmental value and also its high cultural value – and in particular, the Intha. And when one investigates their history, their traditional beliefs, their organizations, norms and livelihood strategies, it is even more amazing.

Different Intha households use different livelihood strategies, and their economic backgrounds influence these. Within their livelihood strategies, social norms between households are very important. For the middle-income and poor households, the number of working members plays a key role, and factors such as these dictate what livelihood strategies the household choose. Almost all the households are environment-dependent, though some live mainly on market-oriented strategies and some are good at negotiating with outsiders for a living.

While environmental degradation and insecure market conditions for floating gardening have led to difficulties for the Intha, all types of household have their own specific problems. To adapt to their new way of life, being able to negotiate with

outsiders and being skilled at fishing or other kinds of jobs are just some of the challenges they face within their daily livelihood process.



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