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THE SUSTAINABLE AGRICULTURE TRAINING CENTER, MYANMAR

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MEAS Case Study # 2 on Small Farm Resource Centers in Asia, October 2013

1. Project Background

Small farm resource centers (SFRCs) have played a strong role in strengthening the relevance and role of their sponsoring organizations (e.g., missions' organizations, development organizations) and were popular as an outreach and development tool from 1920 to1980. In the late 1980s, the advent of participatory rapid appraisal (PRA) and farmer field schools (Van den Berg, 2004) emphasized the importance of farmer-led extension, causing many extension and development experts to question the role of traditional agricultural centers. Though many SFRCs are still in existence, the benefit and efficacy of SFRCs on local livelihoods have never been measured or evaluated comprehensively, perhaps because of their multifarious foci, differences in extension techniques, their secondary role to other institutional priorities, lack of understanding or interest in extension best practices, and lack of institutional vision or sustainability.

There is a need to document, evaluate and empower these existing SFRCs as a useful research-extension tool in South and Southeast Asia operating outside the formal government/ academic extension model. It is our perception that SFRCs have a continued role to reach neglected segments of populations, particularly communities on the margins. To justify their continued existence, however, important questions about their efficacy need to be answered, such as: what is their capability to engage a particular focus group on the basis of that group's felt needs; what is their extension strategy and its ability to catalyze documentable and felt changes related to sustained improved livelihood and food security; how adaptable to change are they in a rapidly developing Asia; and what can the SFRC do to amplify its extension impact?

The purpose of this research was to explore a suite of SFRCs in Southeast Asia to illustrate and classify the concept of the SFRC, evaluate their outreach efficacy and provide recommendations to amplify their extension services. Seven SFRCs were utilized to answer our set of research questions and determine if the concept of the SFRC is antiquated or adaptable, and if the SFRC can remain relevant as a development tool (Table 1; Figure 1).

ECHO Asia facilitated an assessment with SATC's stakeholders to evaluate the organization's effectiveness.

2. Methodology

The data was collected by a combination of questionnaires, surveys and PRAs. Initial data collection was conducted via questionnaires emailed to SFRC directors in December 2012. The questionnaire consisted of 47 questions on topics including the history and mission of the center, staffing, institutional affiliations, demographics of stakeholders and beneficiaries served, budget and financing mechanisms, monitoring and evaluation procedures, on-center and extension work, and long-term/exit strategies. This background information was intended to help identify and classify each SFRC's approach to extension and livelihoods improvement.

Once preliminary questionnaires were distributed and returned, we conducted a one-day assessment, including a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis, brief interviews, and organizational / systems modeling with the SFRC directors and staff members. This assessment took place from January to March 2013 to

understand the perceived operation and services of the SFRCs. This daylong process identified how extension happens, the form extension takes, and who is involved in extension activities on and off center.

In addition, a one- or two-day assessment was conducted with stakeholders -- which we defined as anyone who had a vested interest in the success and functioning of the center and its work (Businessdictionary.com 2012) -- to understand perceived extension effectiveness and its impact on farmers / livelihoods / food security. These assessments utilized SWOT analysis, visits, brief interviews and systems modeling of perceived extension practices.

All data was entered into Excel worksheets during and upon return from the field. Where necessary, data was coded to calculate percentages and ratios. Abram Bicksler of ECHO Asia Impact Center analyzed and interpreted the data using a combination of Excel functions and Excel macros.

3. Findings

Background of Center

The Sustainable Agriculture Training Center (SATC) was started in August 2005 by Rev. Kya Moo, associate general secretary of Myanmar Baptist Convention, and Saw Hei Moo, director, Christian Social Service and Development Department of Myanmar Baptist Convention. SATC is one program of the Christian Social Service and Development Department of the Myanmar Baptist Convention, based in Yangon, Myanmar. The SATC farm is located in Hmawbi Township, approximately 46 km north of Yangon.

A picture of SATC's facilities.

Although Myanmar is rich in natural resources, it remains one of the poorest countries in Asia, with estimates of GDP per capita at approximately $587 US in 2010 (www.tradingeconomics.com 2013). Over two-thirds of Myanmar's population live in rural areas and work as small farmers and laborers. It was against this backdrop of grinding rural poverty that the vision for SATC was conceived. The mission of SATC is poverty alleviation through promotion of sustainable agriculture systems. The farm accomplishes this goal by seeking to fulfill five objectives: to disseminate skills and knowledge on farming technologies through training, to demonstrate and apply new appropriate farming technology, to create training opportunities for farmers in Myanmar and Southeast Asia, to improve food security regionally and to demonstrate agricultural practices that are environmentally sustainable. The original 38-ha SATC site, purchased by the Myanmar Baptist Convention in 2005, has expanded to include a training center, dormitory, kitchen and dining room, staff housing, demonstration plots, research plots, and livestock and crop production facilities (Figure 2). SATC currently employs six full-time staff members: one guard, two farm laborers, two technical staff members and a supervisor. SATC develops and conducts numerous on-farm crop, livestock and appropriate technology demonstrations. These serve as the basis for training at the center and outreach to target communities. SATC also produces and distributes a variety of agriculture and community development resource and training materials locally and within the Myanmar Baptist Convention's 18 language and regional conventions. The SATC staff has a presence within local smallholder farming communities and an extended impact via training of regional and international development workers at the site.

SATC's approach is to widely disseminate pro-poor farming technologies and education by focusing resources on the smallholder farmer community and marginalized ethnic groups such as the Karen. SATC is active in the communities where it works and develops programs based on stakeholder needs. Understanding that agriculture in rural Myanmar is often a feminine enterprise, SATC consistently considers gender in the development of its programs.

Center Efficacy

Since its inception, SATC has worked closely with the local farming community to foster understanding of the goals, objectives and activities of the farm. It has encouraged farm visitation and participation in demonstrations and training, and solicited input on local agriculture and community development needs. This initial and continued investment in local human capacity building established a solid foundation and role for SATC and formed a vital relationship between local community leaders and the center. This investment has paid dividends, and SATC has developed a good reputation within the farming community locally and regionally.

As infrastructure and capacity at SATC grew, its scope and role as a training facility expanded. Stakeholders benefiting from SATC activities are diverse and include Christian Social Service and Development Department national staff members, personnel from local monasteries, regional village headmen, government officials, students, embassy groups, NGO and development organization employees, and local/regional farmers.

SATC has had significant local impact related to the introduction and adoption of new and appropriate technologies and farming practices. Practical hands-on training coupled with demonstrations at SATC have allowed farmers to witness many of these new practices before actually trying them on their farms, thus reducing farmers' perception of risk. This "seeing is believing" approach has been successful for SATC because it has helped to change long-held perceptions of many farmers and has provided them with actual data regarding the positive impact of the innovations (Figure 3). Ultimately, these farmers often become allies of the SATC and its mission and engage in farmer-to-farmer demonstrations in their villages, thus spreading the innovation or new technology into the countryside. Projects that have substantial impact and quick rates of adoption in rural villages targeted by SATC include alternative energy technologies such as biogas and improved cook stoves, vermicompost production and marketing, new crop introductions, sustainable farming techniques (e.g., organic crop production), SRI rice production and market development.

SATC's work includes vermiculture and appropriate technology.

SATC is developing infrastructure and capacity to include applied research capabilities related to appropriate technology. This will allow them to extend practical, "home-grown" results locally and regionally, and will allow SATC to host students and educators wishing to engage in research projects. Its most notable accomplishment in this regard is a biosand filter research program.

SATC's work also involves agroforestry and pig raising.

In the span of less than eight years, SATC staff members have transformed an unproductive, degraded parcel of land into an active, productive demonstration farm. When asked to identify SATC's most significant accomplishments, consensus was that the center has trained extension workers from more than 90 villages across Myanmar in a full range of appropriate technologies, and that these individuals return to improve livelihoods in their villages. When asked what was needed most to improve SATC's outreach and development work, staff members most frequently identified stable and increased funding, additional staff members with good technical know-how, resource and educational materials, supplies and materials to continue development of the center (e.g., construction materials, irrigation supplies), and leaders within their target communities to champion the agricultural innovations delivered by SATC (Table 2).

SATC has been innovative in its approach to financial management and funding of the center's activities and programs. The original land purchases and all of the annual operating costs in the early years of SATC were supplied by the parent organization, Myanmar Baptist Convention. However, SATC has been proactive and creative in its development of alternative funding sources to complement the organizational base support (Table 3). The ultimate goal is for SATC to generate enough income to offset or exceed all of the operating costs associated with the enterprise. In recent years, SATC has actively pursued grant funding as a means of outside support (Table 3). Three successful grant applications have resulted in over 39,000,000 kyats (approx. $34,000 US).

SATC has also engaged in an ambitious program to develop agricultural enterprises on the farm, producing and marketing a wide range of commodities as a supplemental source of income (Table 3). Though the profitability of each enterprise varies depending on weather and market conditions, collectively these income streams represent a significant contribution to SATC's budget. In addition, they offer a much needed real-world laboratory for training in appropriate production practices and enterprise development, business management and marketing. Most recently, SATC has developed infrastructure and capacity to expand its on-farm training capabilities. An ever-increasing number of non-governmental organizations and other groups are involved in agricultural and community development projects in Myanmar, and many of these organizations bring with them a broad range of training needs. SATC is working to address this need for capacity building by offering the development community a variety of training programs. SATC has also developed a realistic business plan that is regularly updated to reflect the current local environment. According to this plan, SATC will realize an operational surplus of funds by 2015, assuming that current trends and practices continue.

Extension Efficacy

Throughout the history of SATC, intensive on-farm training has been a key vehicle for human capacity building. Between 2006 and 2011, SATC conducted 24 training programs for more than 580 farmers. Some of these farmers were from local communities; others came from distant states and divisions and returned to these locations to teach other local smallholder farmers. Farmers participating in the Basic Agriculture and Livestock Training program learn how to raise crops and livestock on small plots of land and how to design and conduct demonstrations. This intensive 10-day training begins with six days focusing on general agriculture, including soil science, plant nutrition and fertilizers, plant growth and development, plant propagation, insects and diseases, safe use of agrochemicals, integrated farming systems and agricultural development. The final four days of the program focus on livestock: cattle and pig husbandry, poultry management, goat management, aquaculture, animal diseases and animal health (prevention and treatment).

Early and on-going success with the Basic Agriculture and Livestock Training program led SATC to development additional courses focusing on particular stakeholder-identified topics, such as Rice Cultivation Using SRI, Environmental Sustainability, Compost Production and Marketing, SALT (Sloping Agriculture Land Technology) and Alternative Energy. As the training capacity of SATC diversified over time, so also did the types of groups receiving training. After Cyclone Nargis in 2008, SATC received a Food for the Hungry grant to develop its relief program, which included training of, and consultation with other relief organizations such as ADRA Myanmar, METTA Foundation, World Vision and Action Aid. Much of the relief training conducted by SATC included an agricultural component and took place at the center. This further solidified SATC's reputation as a source for agricultural education and training within Myanmar. SATC is now working with 18 language and regional conventions across Myanmar and is heavily involved in conducting village-level training well beyond the Yangon region (Table 4).

In addition to helping SATC improve facilities and capacity, the grants also helped to establish the center as a site for learning. For example, the 40 local farmers who participated in the Heifer International grant regularly came to SATC for meetings and training. The grants were also useful in developing skills among Myanmar Baptist Convention employees working on agricultural projects.

SATC has earned an excellent reputation as a key source of agricultural training and education locally and regionally. It is now well-known across Myanmar and has also developed a strong international presence. Recently, the Myanmar Baptist Convention (MBC), in collaboration with the Israeli Embassy, has developed a program whereby MBC staff members work and study in Israel for one year. This Training for Israel Program has now graduated more than 17 individuals representing 18 language and regional conventions in Myanmar. Before leaving the country, candidates for this program undergo two weeks of intensive agriculture training at SATC.

Interviews with community leaders representing four villages served by SATC clearly indicate that SATC outreach and training programs are having a significant positive and measurable impact (Table 5). Community leaders acknowledged improved practices based on knowledge gained from SATC training. They shared concrete evidence of changed practices resulting in, for example, larger and healthier litters of piglets, which subsequently translated into increased income used to pay school fees. Improvements were also noted in pest management and crop yields. SATC projects resulted in communities gaining more confidence in their water supply because increased sand biofilter use and cleaner water equated to better sanitation and a general improvement in overall village health. A theme that was repeated numerous times was the value derived from the village having an active relationship with the center. SATC staff members conducting training in the village and subsequent follow-up visits resulted in high rates of knowledge gained, innovations adopted and practices changed.

4. Summary

By definition, small farm resource centers (SFRCs) rely on a physical location/farm that serves as the basis for the research, education and training activities. It is expensive to equip and maintain such centers, and organizations tend to be hesitant to develop new SFRCs. The SATC demonstrates that SFRCs can generate income to cover a substantial portion of their expenses, but many SFRCs are far less successful in this regard and rely solely on support from a parent organization. This reality can be a barrier to scaling up or duplicating SFRCs in other locations. Finding qualified staff members to operate SFRCs can also be challenging because expertise is required in a range of disciplines including extension methods as well as farming practices. To become sustainable, it is important for SFRCs to develop diverse funding mechanisms beyond sole support from the parent organization. The SATC in Myanmar has been successful in attracting competitive grant funding, developing income streams from products derived on the farm and, in recent years, offering fee-based on-site training programs to agricultural development workers.

The Sustainable Agriculture Training Center evaluates, adapts and demonstrates farming and community development ideas that have been proven elsewhere and that show promise for Myanmar's rural poor. The best of these ideas are developed into a variety of educational and training formats, outreach projects and poverty alleviation initiatives. SATC clearly represents an effective and successful small farm resource center. It appears that a hallmark of all SATC

projects is that they involve little/no risk to local farmers, present something that local farmers are not already doing, make such an impact that farmers readily adopt the innovation and have a strong market link, particularly when the project involves the sale of a product or local acceptance if it is to be used by the farmer him/herself. In the absence of a strong governmental or university-based extension system and/or advisory services, SATC is playing a substantial role in smallholder farmer education, particularly in reaching neglected or marginalized populations. It showcases the classic functions of a successful SFRC while embracing new approaches for dealing with Myanmar's unique constraints and opportunities.

The MEAS-funded assessment of seven small farm resource centers in Southeast Asia revealed a range of attributes and activities that contribute to the success of this particular outreach model. To be effective, SFRCs should be sensitive to the local environment in which they operate and reflect the particular needs of the local communities. Additionally, appropriate funding mechanisms need to be considered because one size does not fit all.

5. Recommendations and Future Directions

This assessment uncovered very few areas of weakness and/or critical areas to improve on in SATC operation and management. This is evidenced by the substantial measurable impact resulting from the center and its outreach program, all developed over a relatively short amount of time. Following are recommendations and future directions developed in collaboration with the SATC director:

- Find resources to improve the road leading into SATC. Visitation and traffic to SATC are likely to increase in coming years, and improving accessibility, particularly during the rainy season, would benefit the center.
- Continue new species evaluation, testing and distribution. This program is highly useful and popular among SATC clients, and it has the potential to open markets and improve income. A focus on underutilized food crops such as grain amaranth and chaya, as well as agroforestry species such as *Indigofera sp*. and *Sterculia versicolor* is recommended.
- Couple new species evaluation with seed banking training and dissemination to help farmers conserve crop biodiversity, improve seed germination and reduce reliance on outside sources of seeds.
- Conduct a financial analysis of current commodity-related microenterprises at SATC to determine if any are less than profitable / useful. Prioritize key enterprises and consider new or additional ways to expand markets for these key products. Be mindful of resources being spread too thin among these various enterprises and maintain high product quality standards.
- Consider expanding and marketing translation services, particularly related to agricultural development. These services and products could be marketed to the ever-increasing number of agriculture-related NGOs and development organizations operating in Myanmar. There likely will be increasing demand in coming years for agricultural training and education materials and field services.
- Seek out and develop collaborative relationships with NGOs operating in Myanmar and regionally, focusing on broadening the center's agriculture and community development network. Actively market SATC agricultural training and education capabilities to this expanding network.
- Continue to seek grant funding for new and existing projects. Establish and strengthen relationships and build teams within the formal and informal agriculture education system, such as Yezin University. Consider ways to collaborate with agriculture education grant-funded projects such as USAID's MEAS and InnovATE.

6. References

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7. Tables and Figures

Table 1. The seven small farm resource centers (SFRCs) assessed as part of this MEAS case study series.

SFRC Name	Location	Director/Contact
Ntok Ntee	Mondulkiri, Cambodia	Ken Thompson
Farm Center Indochina, FCI	Indochina	Contact Authors
Sustainable Agriculture Training Center (SATC)	Hmawbi, Myanmar	Saw Hei Moo
Aloha House	Puerto Princessa, Philippines	Keith Mikkelsson
Center for the Uplift of Hilltribes (CUHT)	Chiang Mai, Thailand	Suwan Jantarayut
Thai Lahu Christian Churches (TLCC) Center	Doi Saket, Thailand	Marting Chaisuriya
Upland Holistic Development Project (UHDP)	Mae Ai, Thailand	Bunsak Thongdi

Figure 1. Locations of six of the small farm resource centers surveyed around Southeast Asia. The location of the Farm Center Indochina (FCI) is not disclosed.

Table 2. SWOT analysis for the Sustainable Agriculture Training Center (SATC), Hmawbi Township, Myanmar. Answers in regular type were given by the interviewees; answers in bold are the opinions of the evaluators.

Strengths (Present)	Opportunities (Future)
– Human resource support: good network of resource people within MBC and outside (e.g., Food Sec. Working Group) – Strong management structure within MBC organization – Good network of international partners (ECHO, UHDP) – Good location – 1 hour from Yangon – Competent, committed and skilled SATC staff – Strong, well-functioning advisory committee – Good govt. relationship – Stable funding from variety of sources – Good track record with grants (Heifer Int., etc.) – Good infrastructure: buildings, phone, Internet, etc. – Adequate water resources; drip irrigation-capable – Good relationship with neighbors – Diverse site topography; allows for various demonstrations – **Strong leadership with clear vision for the future**	– Increasing value of the SATC land – Ability to host/train NGO personnel – New conference building – Training of local seminary students in agriculture topics – Potential to partner/integrate with other local or regional SFRCs – Potential for additional outside grant funding now that SATC capacity has increased – SATC is a multipurpose facility; certain aspects could be more fully utilized – MBC has another farm in Bago; possible income source or increased capacity – Showcase appropriate technology from around the world to local communities – **Expand marketing of training programs to ag-related NGOs**
Weaknesses (Present)	**Threats (Future)**
– Numerous pests (insects, snakes, leeches, etc.) – Surrounded by farmers using chemical methods – Lack of full integration into local/regional markets – Lack of control over local/regional market demand – Poor road leading into site -- challenge in rainy season – **Possible overdiversification into too many small enterprises**	– Unpredictable climate – Thieves – Lack of labor during rainy season – Uncertain government stability and policies – **Myanmar exchange rate -- overvalued currency** – **Impact of rapid development on cost of goods/services**

Table 3. Village-level training programs conducted by the Sustainable Agriculture Training Center (SATC) in regions beyond Yangon.

Program	Number of Villages	Location
Livestock development	25	Various locations throughout Myanmar
Hurricane Nargis recovery	35	Irawaddy Delta area
Famine recovery	25	Rakhine and Chin states
Capacity building	20	Various locations throughout Myanmar
Hurricane Giri recovery	10	Rakhine state
Rural integrated development	50	Various locations throughout Myanmar

Table 4. Sustainable Agriculture Training Center (SATC) income sources external to Myanmar Baptist Convention base funding.

Source	Amount (US$1 = approximately 850 kyats, 2013)
Grants	
Heifer International	19,000,000 kyats
Food for the Hungry	10,000,000 kyats
Veterinary Association of America	7,000 kyats
Grants	
Tearfund (UK), EED (Germany), Diakonia (Sweden)	Application pending or unsuccessful
Farm commodities marketed by SATC	
Moringa leaf powder, mango, *Indigofera* seed, vegetable seed, tree seedlings, vegetables, vermicompost, wood vinegar, firewood, bamboo, rice (straw), fishtail palm (agroforestry products), fish, pigs/piglets, sawdust	Variable income; generally less than US$500/year/commodity
Non-commodity income generated by SATC	
Training fees (including room/board), consulting fees, speaker fees, concrete brick, booklets and educational material	Training/speaker/consulting fees usually exceed US$500 /year, collectively

Table 5. Responses of eleven village leaders to questions assessing the impact of Sustainable Agriculture Training Center (SATC) programs.

Question	Number of Responses by Category				
	1- much worse	2- a little worse	3- no change	4- a little better	5- much better
1: Crop production	0	2	4	5	0
2: Animal production	0	0	2	7	2
3: Household income	0	0	2	9	0
4: Household debt	0	2	4	3	2
5: Health status	0	0	4	5	2
6: Water availability	0	0	1	6	4
7: Sanitation	0	0	0	7	4
8: Center and outreach effectiveness	0	0	1	3	7
9: Future directions	0	0	0	3	8

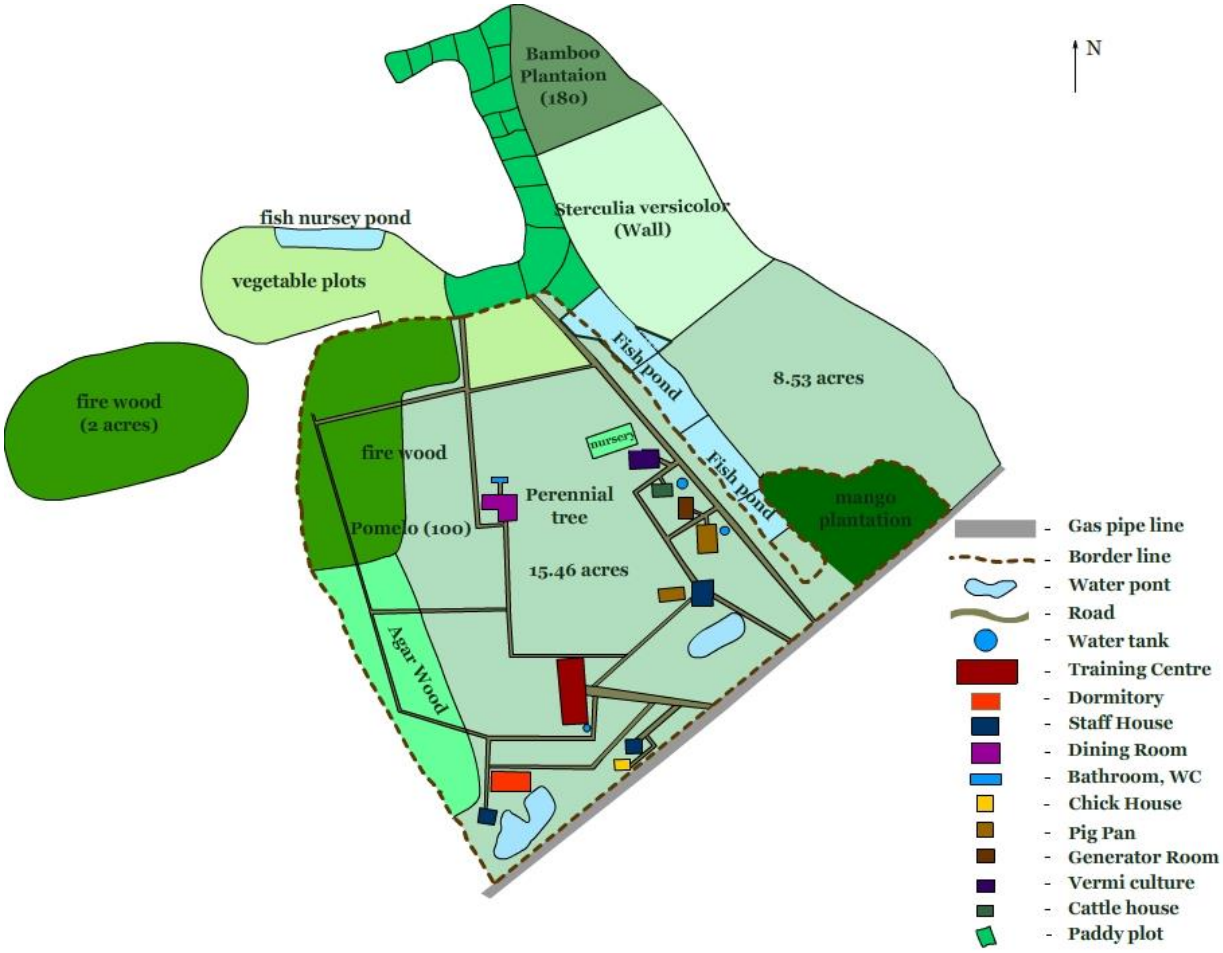

Figure 2. Schematic diagram depicting current facilities and agricultural components of the 34-hectare Sustainable Agriculture Training Center (SATC) in Hmawbi Township, Myanmar.

Figure 3. Appropriate technology (AT) training and demonstrations at SATC: (A) Micro-hydro Workshop with hands-on training, and (B) Biogas training at Alternative Energy Workshop.

Disclaimer

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