



Students line up for a morning meeting at the Baan Huay Euen School in Chiang Rai Province, Thailand.

DEVELOPING A COMPREHENSIVE EDUCATIONAL GARDENING PROGRAM FOR THE BAAN HUAY EUEEN SCHOOL

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BSAC

DEVELOPING A SUSTAINABLE EDUCATIONAL ORGANIC GARDENING PROGRAM IN THE BAAN HUAY EUEN SCHOOL

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Abstract

Many students in rural areas do not receive higher education, so schools must adapt their curriculums to meet the needs of their students. The goal of this project is to develop a comprehensive educational gardening program to teach agricultural skills at the Baan Huay Euen School in Northern Thailand. Through observation and interviews with the staff and students, we found that the existing program lacked the effectiveness and structure required of successful educational gardens. To address these issues, we designed a gardening manual that will improve the efficiency of the garden and provide educators a consistent source from which to teach. The implementation of the manuals and other recommendations in the report can result in a more sustainable educational organic gardening program.

DEVELOPING A COMPREHENSIVE EDUCATIONAL GARDENING PROGRAM FOR THE BAAN HUAY EUEN SCHOOL

Executive Summary

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Poverty and School's Responses

Due to accessibility and high poverty rates in rural areas, many students do not continue onto college or higher institutes (Gibbs, 2000). Without more education many students in rural areas stick to traditional occupations such as animal husbandry, farming, handicraft work, and fishing (Indiazone, 2012). As students continue to seek work in more vocational jobs, schools focus on skill based education, rather than college preparatory courses like mathematics and science (Jones, 2015). The Baan Huay Euen School, located in Chiang Rai province, recently implemented a gardening program to satisfy the government's Less Study, More Skills program aimed at teaching students vocational skills.

Objectives and Methods

In collaboration with the SATI Foundation and the Baan Huay Euen School, **the goal of our project is to develop a comprehensive educational gardening program to provide students with valuable life skills.** To accomplish this goal we established the following objectives:

1. *Identify what makes other educational gardening programs in Thailand successful*
2. *Determine the needs of the school garden at the Baan Huay Euen School*
3. *Identify the current gardening practices and knowledge used in the area*
4. *Analyze the school curriculum and determine how to incorporate a gardening program*

To gather information about each objective we used semi-structured interviews, focus groups, and non-participatory observation. Semi-structured interviews were conducted with teachers, the principal, the head villager, a local agricultural teacher, and a representative from the SATI Foundation. Students made up the focus groups to allow them a space they felt comfortable in. In order to get feedback on our proposed solutions we held a focus group of teachers. Non-participatory observation consisted of watching students work the garden, daily routines of the school, as well as observing agricultural techniques of the local community.

Key Findings

Lack of shared knowledge negatively affects students' education.

Through interviews with teachers, we found varying levels of gardening knowledge within the school meaning students learn different information depending on their teacher. Teachers do not have the background knowledge to effectively teach students about gardening and in many cases, students whose

parents farm have more knowledge than their teachers. After visiting the local farmers market and observing a household farm, we found the community had extensive knowledge about agricultural techniques though those did not translate into the school. Without consistent source of information coming from, students' educations suffer.

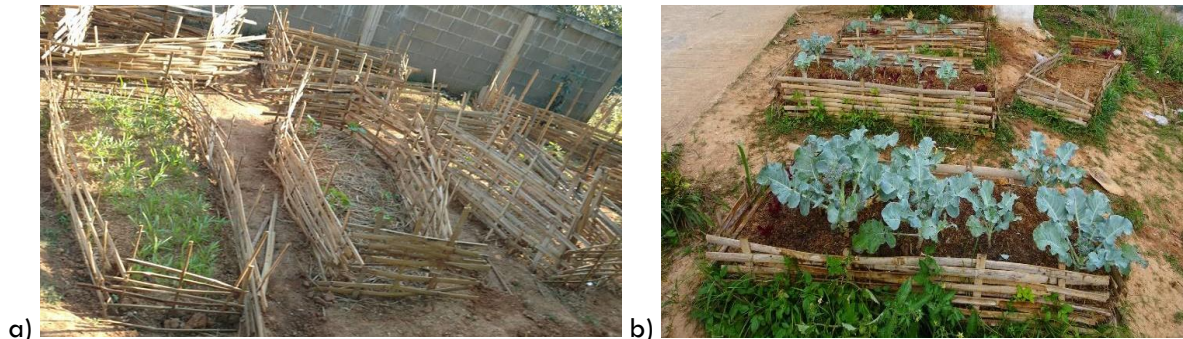


Figure A: a) Poorly organized garden at school; b) Well organize garden at school

Current permaculture techniques decrease effectiveness of the educational program.

The current layout of the gardens and the lack of fertilizer integration negatively impacts the success of the garden as a comprehensive educational tool. Unorganized gardens spread throughout campus do not provide a good model for students. From our observations we found students wash pig waste down tubes directly onto a garden which causes health risks to students as well as an inability to use the waste for fertilizer. Without proper technique for collecting waste to make fertilizer and creating well organized gardens, students learn incorrect information from the beginning.

Looking ahead

Short Term Recommendations




Varying levels of knowledge about organic gardening among teachers at the Baan Huay Euen School negatively impacted the success of the students. Therefore, the success of the gardening program relies on the ability of the teachers to maintain consistency in their lessons. For this reason, we created an easy to follow guide of gardening techniques, and we recommend that the teachers in the Baan Huay Euen School reference this manual in order to teach consistent information (Appendix A). The manual contains information on appropriate planting techniques, fertilizers, nutrition, and meal recipes. Following this manual ensures all teachers have the same information about organic gardening as well as helpful infographics they can use to teach with. Additionally the school can start to incorporate fertilizer into their gardening practices and increase space efficiency. Alternatively teachers can attend extra classes on agriculture though that would put undue stress on them.

Long Term Recommendations

The gardening manual provides short term improvements to the current garden, however long term considerations can increase the effectiveness and continue to grow the program. With this in mind, we recommend our sponsor distribute the gardening manual to other schools wishing to teach their students agricultural skills. By doing so, a network of schools could form where ideas can spread.

As another long term consideration, we recommend addressing erosion and water scarcity before they become detrimental to the gardening program. Erosion provides a hazardous environment for students to work in as well as takes away valuable space for gardening. The school should build retaining walls for large dirt precipices, especially on the Terrace Garden to keep it from collapsing. On the other hand, water scarcity, though not a huge issue currently, could prove problematic as the garden expands. Waste water from students using a filtered water tank can accumulate through a system of tubes and used to water the garden provided the soap contains organic materials.

วิธีทำปุ๋ยจากเศษใบไม้

- นำเศษใบไม้ใส่ลงไปในบ่อซีเมนต์ให้สูงประมาณ 10 ซม.
- นำเศษอาหารใส่ทับลงไปให้สูงขึ้นอีกประมาณ 5 ซม.
 ระวังอย่าให้เศษอาหารโดนซีเมนต์ เพราะจะทำให้สั่นกลับหมัน 
- นำเศษใบไม้ใส่ทับลงไปอีกชั้นให้สูงขึ้นอีกประมาณ 10 ซม.
- รดน้ำทุกวันเป็นเวลา 2 เดือน
 รดน้ำแค่พอเปียกใบไม้ให้ทั่ว 
- ตักทิ้งไว้อีก 2 เดือน


TIPS
สามารถนำก้อนอิฐ หรือก้อนหิน มารองใต้บ่อซีเมนต์ เพื่อที่ว่าเราจะสามารถนำปุ๋ยที่หมักไว้ก่อนด้านล่างมาใช้ก่อนได้ในขณะที่ทำเพิ่มไปเรื่อยๆอีกหลายชั้น 

Figure B: Example page from the gardening manual

Conclusion

By adapting our proposed gardening manual to the curriculum at the Baan Huay Euen School, the school will have a more comprehensive gardening program to teach students valuable life skills. We designed the manual in two main parts: a general organic gardening guide that any school can use to create a comprehensive gardening program and a more specific section to address the specific needs of the Baan Huay Euen School. With minor changes to the manual, any school can adapt the information to fit their specific needs. The program we developed in collaboration with the SATI Foundation and the Baan Huay Euen School can serve as an example for other rural schools hoping to arm their students with valuable knowledge to improve their futures.



Figure 1: Students working on the garden on their own time



Figure 2: Student walking on the edges of the concrete cylinders.