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|          | <b>Situation Report</b><br><b>ESSI-Na Fa Elementary School</b><br><b>REEEPP 2004 2005</b><br><b>(Rural Environmental Education Enhancement Pilot Project)</b> |                                      |
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| <b>Community-based Environmental Education for Families and Sustainable Neighborhoods</b> |   |                                      |

**1.0 INTRODUCTION**

The Na Fa faculty was very concerned they did not do things properly and did not make sufficient progress during the past year. The Thai education system is undergoing major reforms. During the past year, teachers got new government training as the school began the transition to the new system. This took time away from the REEEPP effort.

The performance of the faculty and staff at Na Fa Elementary School is truly amazing. With minimal supervision and direction from ESSI, they took the basic ideas of Green School, Habitat, and the NASA S'COOL projects to heart. They launched very successful activities at the school. This is a testament to their professionalism, dedication and motivation to support REEEPP.

This is the first time that ESSI formally committed to working with a school. Normally, ESSI operates at the community level, people-to-people, and bypasses the traditional school system. So this was also new ground for ESSI. REEEPP is predicated on mutual respect / mutual benefit, self-selection, and cultural diversity. Success of REEEPP depends on all participants working together, bridging cultural, linguistic, and resource barriers to empower people to create and maintain sustainable communities.

The ESSI Advanced Team filed this summary overview report.



Na Fa Elementary School  
 Ban Na Fa, Jompra  
 Thawangpha City  
 Nan Province, Thailand

19.07586° N  
 100.8637° E  
 257 m asml  
 GMT +7 hrs

## 2.0 GREEN SCHOOL

**2.1 Original Plan:** Introduce the concepts of “reduce, re-use, recycle” to grades K-1; establish a Trash Bank to earn funds for “Children’s Day”, with students voting on how to spend the funds.

**2.2 Na Fa Implementation:** The recycling effort was launched at a limited scale throughout the school across all grades, K-6. Students gather and sort recyclables (plastic bottles, glass bottles, paper, and aluminum cans). These are sold to a local recycling business. Teachers contact the company when there are sufficient amounts of materials collected. However, this program was not been fully implemented. The original plan to renovate the old chicken coop as the recycling center was abandoned due to the construction of a new cafeteria. Although construction is complete, the new cafeteria is not opened. The current plan is to set up to reuse the old kitchen as the recycling once the new cafeteria is in service. In essence, the school “recycles” the old kitchen building.



Old Chicken Coop



New Cafeteria / Kitchen



Old Kitchen / Teachers' Lunch Room (L = front; R = back)



**2.3 Problems:** The effort is hampered by two key issues: the lack of a sorting facility site and improper sorting of materials by some younger students. Older students have been helping to train the younger students in an effort to improve the sorting issue.

**2.4 Future Plans:** The faculty has been working on an idea to get students to bring recyclables from home. The Trash Bank will be modified to set up individual student accounts. This would lead to economic lessons in banking and saving.

**2.5 ESSI Summer 2005 Volunteer Effort:** The “Recycling Game” will be introduced to the school this summer when the American volunteers arrive. This should help to make students more aware of the proper sorting of the materials, and increase their English language proficiency in this area. The game makes the English and environmental lessons fun.

**2.6 Topics for Consideration:** If individual student accounts are established, would it be possible to estimate the significance of the recycling program to a village? What is the estimated reduction in trash disposal gained by this program? What is the cost of trash disposal services vs. the income from recycling?

### **3.0 HABITAT**

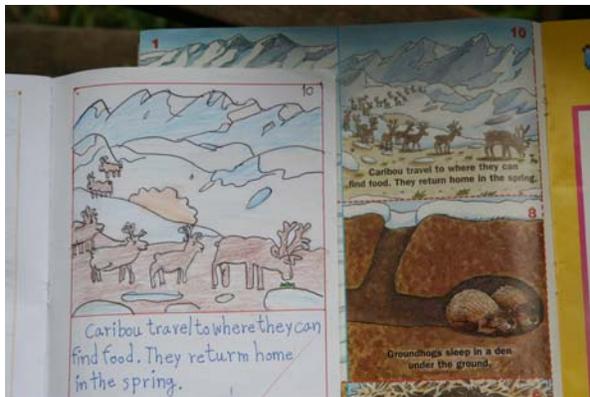
**3.1 Original Plan:** The idea was to introduce the National Wildlife Federation (NWF) Backyard Wildlife Habitat™ and Schoolyard Habitat programs to grades 2-4, and to have students certify backyards. The NWF donated ballpoint pens and a 1-year subscription of Your Big Backyard to the students, and NWF logo T-shirts to the faculty and staff.

**3.2 Implementation:** The school moved quickly last summer to create a habitat garden at the east end of the campus using the basic habitat elements (food, water, cover, and places to raise young). In addition to planting the garden, they built a fish pond. After stocking the pond with baby fish (tilapia, catfish, and guppies), they also reported that some of the fish raised in the fish pond went to the school cafeteria.

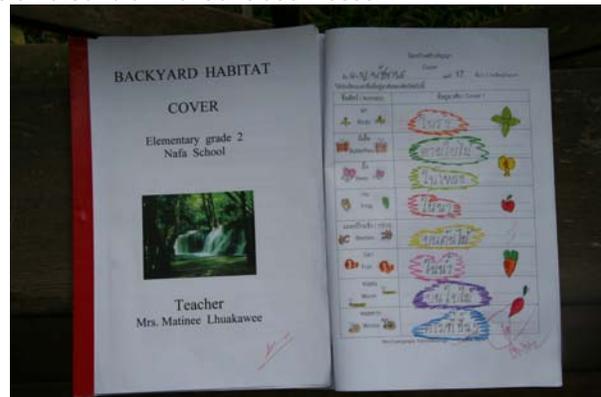
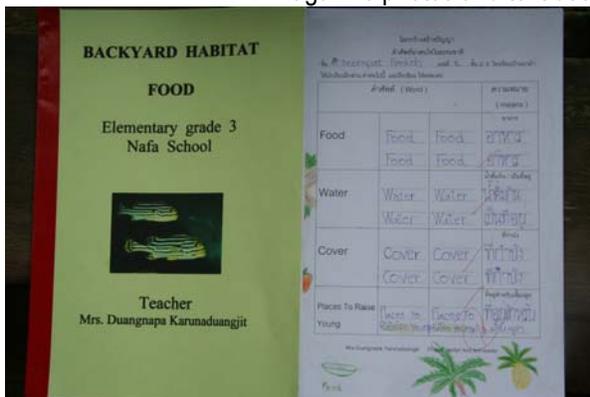


Na Fa Elementary School Habitat Garden

Students (Grades 2-6) studied the basic Habitat elements (Food, Water, Shelter, and Places to Raise Young) as a combined science, penmanship, and English lesson. The National Wildlife Federation donated a 1-year subscription to “Your Big Backyard”. The students use the magazine to study nature, art, and English. They read an article, draw pictures of the animals in the article as art practice, and translate the article to Thai.



NWF Magazine photos and text become an art and a Thai translation lesson.



Students learn the basic habitat vocabulary in English.

**3.3 Problems:** The faculty received no formal Habitat Steward training. The lack of Thai language materials precludes conducting a full Habitat Steward training at this time. Saifon Lee (an NWF Habitat Steward) gave the faculty an initial orientation to the Habitat program in summer 2004. This basic training guided the teachers in their program implementation. Thus, the current Habitat program in Na Fa Elementary does not conform to the official NWF habitat program details. The teachers improvised to start the program on their own that basically follows the general NWF program.

**3.4 Future Plans:** Three villages (Ban Na Fa, Ban Mai, Ban Na Phuek) along the Yang River (that bounds the school and is a tributary to the Nan River) collaborated to protect the tributary by clearing it of debris. As the water quality improves, the school is considering a cooperative plan with the village to create a community fish pond to raise fish for the village. The details need to be developed. But this is a direct application of habitat lessons extended to fish farming, biology, economics, community development, community relations, sustainability, and social responsibility. A major concern is water quality in the river due to the extensive use of agricultural chemicals in watershed.

**3.5 ESSI Summer 2005 Volunteer Effort:** Composting and non-toxic pest controls will introduce the “sustainable practices” component of the habitat program. The summer 2005 program also forges closer ties between the village and the school. The ESSI volunteers will live with host families. The host families will get composting and non-toxic pest control training. They will “teaching back” these topics to the school faculty / staff. [Note: The Green School and Habitat are part of the larger ESSI program of

sustainable agricultural practices. This program seeks to restore the self-sufficiency of small family farms.]

NWF donated 200+ green plastic wrist bands to the Na Fa Elementary School effort as student incentives. Coincidentally, the green wrist bands match the student green and yellow school uniform.

**3.6 Topics for Consideration:** An assessment should be done to see how the school garden meets the official NWF Backyard Wildlife Habitat and / or Schoolyard Habitat criteria with an eye toward NWF certification. The assessment will also document what was done and may point out areas for improvement in the Habitat training for the Thai teachers. From ESSI's perspective, more local flora and fauna references are needed.

#### **4.0 NASA CERES S'COOL**

**4.1 Original Plan:** Get Na Fa Elementary School registered as a NASA CERES S'COOL project site and link the school to this international scientific research project. Students in grades 5 and 6 would be the primary participants.

**4.2 Implementation:** During summer 2004, ESSI facilitated the registration formalities with NASA. The teachers downloaded various reference files of cloud pictures and created a bulletin board display. The primary activity has been training students in grades 5 and 6 to recognize the cloud types.



**4.3 Problems:** The teachers felt overwhelmed. Irregular internet access and a limited level of science / technical training and the language barrier hampered making much progress. Internet access was not available due to a lack of a phone line to the school and a small budget limited the use of the local Internet shop. No reports were filed with the S'COOL program during the first year of activity.

**4.4 Future Plans:** More reliable internet access at the school will give school better access the satellite coverage and online reporting. An ESSI modified S'COOL report form should streamline the observations.

**4.5 ESSI Summer 2005 Volunteer Effort:** ESSI volunteers will be conducting intensive training in the basic S'COOL observations (cloud type identification, visual opacity, cloud cover, and ground conditions). Depending on faculty interest and resources, training will be conducted in additional weather observations techniques (e.g. temperature, precipitation, relative humidity, wind speed and direction, and barometric pressure).

**4.6 Topics for Consideration:** Some teachers expressed concern that the NASA S'COOL project may be too complicated for them to adequately guide the students. The back up plan is to train students in weather observation and measurement. ESSI is prepared to support this alternative curriculum.

#### **SUMMARY:**

REEEPP is a qualified success for its first year of operation. The faculty got minimal instruction, supervision and training yet successfully implemented activities in all 3 REEEPP projects (Green School, Habitat, and NASA CERES S'COOL). During the past year, major reform of the Thai education system began. This took time away from working on REEEPP. The ESSI collaboration with Na Fa Elementary demonstrated that the principles of mutual respect / mutual benefit and self-selection empower teachers. Guided by general concepts and motivated to improve educational opportunity for their students, the Na Fa Elementary school faculty performed very well.

The Na Fa faculty needs to modify some of the REEEPP activities to conform to the new Thai Education Ministry requirements. This is an ongoing process. The specific lessons and modifications are not fully known. However, the flexibility of the ESSI REEEPP program makes it easy for local adaptations in lesson materials. ESSI will continue its technical and curricular development support for the pilot project. Lessons will be developed and / or modified according to input from the Na Fa Elementary faculty.

Efforts will also continue to interconnect the school lessons with the larger ESSI sustainable agricultural practices training. The ESSI Rural Training Center (RTC) Thailand operation will be bolstered with additional training of the ESSI volunteer RTC staff and a demonstration farm site is under development for summer 2006. At some point in time, the ESSI RTC volunteer staff may be able to further assist Na Fa faculty more directly.