

Supporting Partner:



Submission Form of 2014 SEAMEO-Japan ESD Award
Theme: Fostering Global Citizenship for Sustainable Future

The last day for submission of entries: 15 September 2014

PART I: Details of Your School

1. Name of your school: **SAN AURELIO NATIONAL HIGH SCHOOL**
2. Full address: **SAN AURELIO,BALUNGAO,PANGASINAN**
3. Postcode: **2442**
4. Country: **PHILIPPINES**
5. School's telephone number (country code+city code+telephone number): **+ 63 917-505-1406**
6. School's fax number (country code+city code+fax number): **none**
7. School's email Address: **none**
8. Name of the Head Master/ Principal/ School Director: **ROSALINA C. SAVELLA**
9. Name of Teacher Coordinator: **DIANA M. DEL MUNDO**
10. Email address of the Coordinator: **diane_ringo@yahoo.com**
11. School website (if available): **none**
12. Educational level (Such as Kindergarten 1 to Grade/Year 9): **Grade 7 to Fourth Year**
13. Number of teachers in your school: **12**
14. Number of teachers participated in this programme: **8**
15. Number of students in your school: **167**

PART II: Information about the School's Programme

The information of part II from no.1 to 13 should be no longer than nine (9) pages long of A4 in total. The information should be written in Times New Roman font, 11-12 point size.

1. Title of the school's programme

Promoting Sustainability Through Vermicomposting and Vermiculture

2. Summary of the programme (a half to one page A4)

Vermicomposting / Vermiculture, which is raising *African night crawlers* or worms, is a project that was launched at San Aurelio National High School on January 22, 2013.

With five members of the Science Club, this writer who was also the Science Club Adviser when the project was started put up this programme to help poor students earn some income in order to pay for their miscellaneous fees and other needs. The programme was supported and approved by school authorities and by the parents of the student beneficiaries. Science club members were also involved in the project by constantly monitoring the project.

Vermiculture is a simple and affordable project which the students could handle / operate in the school. This involves raising African night crawlers and feeding them with cow / carabao manure and other decomposed materials.

At the launch of the project in January 2013, an initial ten (10) kilograms of worms were placed in the vermi bed in a mixture of rice stalks, banana stalks and twelve sacks of cow / carabao manure. The cow / carabao manure was pulverized and water was sprayed on the mixture to maintain moisture.

After two weeks, the ten (10) kgs. Of worms multiplied to 15 kgs. And 10 kilos of vermicast, now organic fertilizer, were realized. Each kilo of vermicast was sold at seven (7) pesos per kilo while a kilo of worms was sold at five hundred pesos (P500).

Meanwhile, a representative of the Department of Agriculture came to visit and monitor the project regularly. Also, the Education Supervisor Virgilio R. Barba monitored this program and found and certified it to be sustainable.

In April 2013, after four months only, this project raised a net income of Two thousand Five Hundred Twelve (P2, 512.00) which was divided equally among the student-beneficiaries.

This programme is still being adopted / operated by the school now, the worms have multiplied a lot and several sacks of vermicast have been sold.; others are stored for future buyers. Some kilos of worms have also been sold to other proponents like farmers, housekeepers, plant growers, teachers and the like.

On the other side, aside from its monetary benefits, the school uses some of the harvests for the maintenance of its robust vegetable gardens and nurseries. The school came up with organic gardens treated with vermicast.

Vermiculture is a sustainable programme. As long as there are *African night crawlers*, cow manure, and other decomposed materials, this could last a lifetime since it has no age limit of its growers, from a seven-year old pupil to an eighty year old man. All it takes is patience and industry of the caretaker / grower.

Thus, what started at San Aurelio NHS as a simple project for students, was also adopted by some farmers in the community as well as teachers from different schools in the division.

Currently, it is on-going at San Aurelio National High School and teachers and students work hand in hand to maintain the productivity of the project only because of its monetary benefits but because of its good impact on the environment.

3. Background information or reasons why the school created this programme

San Aurelio I, is one of the twenty barrios of Balungao, and where San Aurelio National High School is located, has a clay type of soil and is a rainfed area. There is no irrigation, thus farmers plant rice *Oryza sativa* once a year (June – august). After harvest in October, up to the dry month in April, large cracks appear on the soil.

For other source of income, farmers raise goats, cows and fowl. Very few farmers plant vegetables because the soil is hard and tight. Others gather firewood or make charcoal and sell them so they could have money for family needs. Most students of SANHS are the children of these poor farmers.

In order to solve this problem and to help these poor residents earn income, the municipality of Balungao sponsored a seminar on Vermicomposting and Vermiculture.

All agencies of the government, including the Department of Agriculture and the Department of Education were invited to send their representatives to this seminar. San Aurelio NHS was represented by three teachers: Perla O. Ruiz, Rosalina C. Savella and Diana M. Del Mundo. After the seminar, the participants were given free African night crawlers to propagate. San Aurelio NHS was given 10 kilograms of worms. That day, January 22, the San Aurelio National High School Vermiculture was born.

Immediately, Diana Del Mundo called for a meeting of the Science Club. Five members were chosen to help in the project. However, many students contributed cow manure, banana stalks and rice stalks. Then two parents volunteered to construct the vermi bed and the worm house. Then, the initial 10 kilograms of worms were placed in the worm bed, and after three weeks, the first harvest of vermicast was done, and on the fourth week, a kilogram of worms was sold to a buyer. The cycle of feeding and harvesting went on and on until now.

4. Objectives/goals of the programme

The specific objectives of this programme are:

- 1) To provide additional income to student-cooperators so that they could help their parents
- 2) Train students and residents on how to conduct vermicomposting / vermiculture in the school and in their own backyards
- 3) To improve the type of soil in the school campus so that students and teachers could plant more vegetables
- 4) To encourage farmers / parents in the barangay to plant vegetables and other crops using vermicast as organic fertilizer
5. Promote the importance of growing vegetables and plants organically in the school and in the community
6. Develop industry , patience and teamwork among students
7. To reach out and involve the community in environmental-caring activities

5. Core competencies of students (e.g. knowledge and understanding, cognitive skills, non-cognitive skills and behavioural capacities) that the school aims for within the programme.

With the implementation of this programme, the school, specifically, the proponent, Mrs. Diana M. Del Mundo saw to it that the knowledge, understanding and other skills could be developed among her students, particularly, the student beneficiaries and members of the Science Club.

The students were instructed on how vermiculture comes as a process. *African night crawlers* are worms that devour cow manure or waste matter excreted by other cattle such as goats and carabaos. Then, these worms excrete vermicast, which is used as organic fertilizer. This in itself is a scientific process of reproduction.

Meanwhile, as a teacher, Del Mundo explains to her students how worms reproduce / multiply by themselves. Besides, removing cow manure from the fields helps make the environment clean, while using vermicast as organic fertilizer makes the plants green and more robust.

Moreover, by working together as a team, both teacher and students develop teamwork /

cooperation. The student's motor skills such as fetching water and spraying the mixture, as well as pulverizing dried sacks of cow manure are further enhanced. Above all, the students learn that it pays to be determined, industrious, hardworking and patient. All these they learned as they went through this project and these are integrated in their lessons.

Furthermore, the present student cooperators learn these things too since this programme is sustainable and will last as long as there are worms, and as long as there cows / carabaos to give their manure as worm feed.

Ultimately, the school develops awareness among students the great concern for their present environment. Since vermiculture is eco-friendly, it is here to stay at San Aurelio NHS.

6. Period of the time when the programme was or has been implemented

The San Aurelio National High School vermiculture / vermicomposting was launched on January 22, 2013. It has been implemented in the school until now, and it will continue to exist here at SANHS as long as there are students and teachers who are willing to take care of it.

7. Activities (Actions and strategies of implementation)

The Local Government Unit of the town is embarking on ORGANIC FARMING. In this manner, farmers of the town attend seminars and workshops on how to produce organic fertilizers for their ricefields. The mayor of the town also wanted to do the same for the schools for their vegetable gardens and plants.

STEP 1: SEMINAR on VERMICOMPOSTING and VERMICULTURE

Three teachers responded to Mayor Philipp Peralta's invitation to attend the seminar on vermiculture and vermicomposting. An expert was invited to lecture on vermiculture and vermicomposting. Perla O. Ruiz (Head Teacher III), Rosalina C. Savella (Head Teacher III) and Diana M. Del Mundo (Science Teacher) attended the whole day.

For the next seminars, students were likewise invited to attend. Mrs. Del Mundo accompanied some members of the Science Club. They were introduced to the preliminaries of the project.

STEP 2: MEETING AND PLANNING with PARENTS and the SCIENCE CLUB

Del Mundo met the members of the Science Club. Also, five student cooperators were chosen namely: Randolph Ancheta, John Luise Labergue, Raphael Pecio, Bonigacio Corpuz and Romir Camba. Their parents also came to the meeting. They will constantly monitor on the conditions of the worms as well as the physical set up of the vermi house, with the supervision of Mrs Del Mundo.

STEP 3: SCHOOL BASED LEADERSHIP WORKSHOP AND ENVIRONMENTAL AWARENESS CAMPAIGN

A school-based leadership workshop and environmental awareness campaign was launched in the school. Various topics were included such as Leadership, Climate Change, Sustainable Development and Ecosystem Conservation. The seminar was conducted for three (3) Saturdays.

Moreover, the need for vermiculture and vermicomposting was emphasized to the students as well as the teachers to clean the environment by utilizing decomposed matter for fertilizers.

STEP 4: CONSULTATION with the HEADS of the AGENCY

A written request was made to Mayor and the Department of Agriculture for the availability of materials to start the project.

Next activities were the construction of the vermi bed / vermi house, the flooring and parameter fences to ensure the safety of the worms, from chickens, frogs and other animals that might eat the worms by

volunteer parents from the community. The Department of Agriculture personnel were invited to visit the vermi house to ensure its effectiveness.

Student cooperators and Science club members started to bring materials for the worm feed like cow / carabao manure , banana stalks, decomposed rice stalks, decomposed dried leaves of trees and decomposed grasses.

STEP 5: LAUNCHING of the PROJECT

The Department of Agriculture gave 10 kilograms of African night crawlers as starters for the project. They even supervised in the mixing of the worm feed and gave additional tips on how to make the worms healthier and easier to reproduce. This marked the launching of the VERMICOMPOSTING / VERMICULTURE PROJECT of the school.

After more than a month, the school had produced almost 1 cavan of vermicast (organic fertilizer) and the worms almost multiplied doubly.

Mrs.Del Mundo personally attended in the harvest, weighing and packing of the vermicast. The outputs were sold and the worms turned to cash. The cash was equally divided among the student co-operators for their school needs.

The project was monitored regularly by a representative from the Department of Agriculture. In May 2013, Education Program Supervisor of Pangasinan II, Mr. Virgilio R. Barba, checked on the project and certified it to be productively implemented. Because of this, Mr. Barba tapped Mrs.Del Mundo to be a Division lecturer on Vermicomposting / Vermiculture before some 700 teachers and principals in two venues in October 2013.

Some participants bought vermicast and worms and so it gave additional income to the school, aside from being tagged as the VERMICULTURE capital in the division of Pangasinan II.

In May 2014, Education Program Supervisor of the DepEd, Mr. Virgilio R. Barba awarded the proponent a CERTIFICATE of SUSTAINABILITY on the project.

8. Teaching and learning methodologies that the school applies for promoting the core competencies as identified in number 5

Teaching and learning is best described in the saying “Experience is the best teacher”. This is what students do in vermicomposting and vermiculture project. The teacher conducts lectures on vermicomposting and vermiculture through video and powerpoint presentations.

Then, students personally gather the needed materials for the worm feed and put in the *African night crawlers*. During harvest time, they will personally weigh and pack the outputs.

Grade 9 students who are enrolled in Agriculture as their specialization are also involved in vermicomposting. They apply organic fertilizers to their plants and produce *African night crawlers* as well.

The project was now integrated in subjects like English, Sciences, in Health, in Physical Education, in Values formation and most specially in Technology and Livelihood Education.

Mrs.Del Mundo also lectures to other schools in the Division. In this manner, more and more schools are educated on vermicomposting and vermiculture; more and more students get involved and more and more income for the families, greener and cleaner environment.

In the process, students develop positive values such as caring for the environment, patience, responsible and teamwork.

9. Partnership, community participation and international connection (Details of partners, their roles and activities that they have involved)

SANHS Vermiculture Project was implemented with the help of the following partners:

Name of Partner	Roles and contributions
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School Principal and Department Heads	Planning and participation in the seminar on vermicomposting and vermiculture
The Local Government Unit of Balungao, Pangasinan thru Mayor Philipp G. Peralta	gave the initial ten (10) kilograms of African night crawlers. Mayor Peralta would also be a regular buyer of these worms from time to time when he would need these in his own farm.
The Department of Education	allowing the teachers and students to attend the seminar
Department of Agriculture	free seminar and workshop / demonstration ; encouragement and monitoring of the project; providing advice on gardening activities and certified seeds for the organic garden
Parents	Construction of vermi bed and worm house including the flooring and parameter fence
Barangay Council of San Aurelio 1 st and San Aurelio 2 nd	financial support in the put up of vermiculture house and concreting of the vermiculture flooring
Civic spirited alumni and donors	Financial aid for the construction of fence of the organic garden
Department of Environment and Natural Resources (DENR), Manila thru Director MAYUMI	endorsement to the provincial level (PENRO) for the market of vermi (worms) and organic fertilizer (vermicast).
TLE Education Program Supervisor Mr. Virgilio R. Barba	invitation to lecture in the Division to some 700 teachers – which paves the way for additional market of the vermicast and worms and also invitations to other schools for the conduct of seminars and workshops
To top it all, this vermiculture project was also presented at the SEAMEO QITEP in Bandung, Indonesia by Diana M. Del Mundo who attended the Training Course on Environmental Education for Sustainable Development from August 21-30, 2013.	

These are the partners who are in full support of vermiculture up to now and even in the future.

10. Monitoring and evaluation mechanisms and summary of results

Monitoring and evaluation mechanisms:

The school emphasizes regular monitoring of the project. The members of the monitoring and supervision are the Education Program Supervisor, Principal, Head teachers, Teacher Coordinator and personnel from the Department of Agriculture.

The table below shows the monitoring and evaluation of the project. Schedule of the daily duties of student co-operators is also hereby provided as reflected in the table below.

Schedule of the daily duties of student co-operators

Monday	Tuesday	Wednesday	Thursday	Friday
Student Cooperators / Science Club member	Student Cooperators / Science Club member	Student Cooperators / Science Club member	Student Cooperators / Science Club member	Student Cooperators / Science Club member

Logbook of Monitoring Personnel is also provided for the supervision of the project. Below is the format of the table:

Logbook of Monitoring Personnel

Date	Monitoring Personnel	Remarks	Signature

Aside from student-cooperators who help maintain the over-all maintenance of the vermicomposting / vermiculture project, Science club members are also given tasks of monitoring the project on daily basis such as checking the availability of worm feed, the moisture content, the water, the presence of animals on the bed and the overall cleanliness of the vermi house.

Harvested outputs are also listed and the amount of vermicast being applied to vegetable gardens are also being supervised by the in-charge of the project. The monitoring team in the school meets every week to talk on inputs and outputs of the project.

Awarding of Certificate of Sustainability – May 4, 2014 by Mr. Virgilio R. Barba, Education Program Supervisor in TLE

Summary of results:

- Vegetable gardens and plant boxes are well maintained because of organic fertilizer. Plants are healthier and more robust.
- Parents become aware of the importance of organic fertilizer over the commercial ones.
- Ricefields near the school are cleaner because students collect animal manure, as well as decomposed rice stalks and banana stalks and voluntarily gave them for the project.
- Children in the community also collect animal manure and later sell them in the school, for additional income
- Increase in the number of students, parents and stakeholders who are becoming interested in the Vermicomposting / vermiculture project .
- Increase in the number of schools requesting for the conduct of seminars and demonstrations about the project
- 100 percent increase of vermicast monthly and 50 percent increase in worms monthly

11. Resources used for programme implementation

- ✓ Vermicomposting / Vermiculture seminar and training – free participation sponsored by Department of Agriculture
- ✓ 10 kgs. Of African night crawlers – free from LGU Balungao and Dept. of Agriculture
- ✓ Resource speakers – expertise on the project
- ✓ Municipal Agriculture Officer and personnel – expertise on the project
- ✓ Housing for the worms – proceeds from Science Festival and donations form alumni and barangay council
- ✓ Labor for the carpenter – proceeds from the Science Festival and recycling of bottles and plastics
- ✓ Snacks during the launch of the project – donations from barangay council
- ✓ Cow manure – donated by students
- ✓ Banana stalks – donated by students

- ✓ Rice stalks - donated by parents
- ✓ Certified vegetable seeds – Department of Agriculture and farmers

12. Benefits/Impacts/ positive outcomes of the programme to students, school and community

BENEFITS TO STUDENTS:

Students earn while they learn. Raising African night crawlers in school gave the students a hands-on experience in preparation for their own vermicomposting and vermiculture project of their own. Moreover, participation in this program enables the students to think critically, develop their leadership potential and teamwork, patience and industry. This gives them also opportunity to visit other places and schools when they demonstrate and lecture about the project.

Above all, this becomes an alternative for the less fortunate students to finance their own secondary education.

BENEFITS TO SCHOOL:

In the school, vermicast is used to fertilize the plants and vegetables. Because of this, the school has an “organic garden” wherein pure vermicast is applied. In this manner, students and teachers are guaranteed of healthier vegetables.

Likewise, the school nursery and vegetable gardens become more productive in terms of quality and quantity of harvests. Vegetables were robust and healthy. Some of the harvested vegetables were cooked for the feeding program of the school.

The school became known in the division because of this project. The proponents as well as the students were invited to lecture and demonstrate on this. Thus, it becomes an opportunity to go places and share the practice to others.

The project gives additional income to the school specifically the Science Club. This provides extra funds to be use for the other operations and activities of the club.

San Aurelio National High School came to be known as “vermi magnate” according to the TLE Education Program Supervisor Virgilio Barba who has much interest in the impacts of vermin to the environment especially fruits and vegetables.

BENEFITS TO COMMUNITY:

Vermiculture has had positive effects on the residents of Balungao. Particularly in San Aurelio, many farmers have now adopted this project.

Also, the adviser and proponent of this project enjoys the added income from the sale of worms, at the same time, it gives them a feeling of satisfaction and pride that this vermicomposting and vermiculture has helped many people in the community, especially students.

People in the barangay have now become aware of the advantages of vermicomposting both to humans and to plants. As an example, there is an owner of the dragon fruit plantation in Balungao who uses vermicast as organic fertilizer to his four-hectare plantation. The dragon fruits have borne so much fruits and this farmer is now enjoying a lot of profit – because he has his own vermicomposting too.

The ricefields of barangays with vermicomposting and vermiculture are clean of cow / carabao manures, decomposed banana stalks and rice stalks because people gather them from time to time for the worm feed. This ensures healthier environment free from deadly mosquitoes and flies.

13. Plan for sustainability and plan for the future

Plan for sustainability:

We will continue our efforts in educating our students to take part in sustainability projects like vermiculture and vermicomposting. The project will still be included in the annual action plan of the school and continue to work closely with our stake holders.

When the SANHS Vermiculture expands and there will be tons and tons of vermicast and worms,

the school hopes to turn them to cash and will bring in more money for the school's other projects and activities. The proponent will make linkage or connections with large agricultural companies so that San Aurelio NHS will become a supplier of vermicast and African night crawlers.

More worms to be grown, more vermicast to sell and fertilize the vegetable gardens and farms locally.

More money will come in and more people will be benefitted and the environment will become more friendly, Nature will be happy. Impossible dream? No, it isn't. This is very much possible since vermiculture is not only attainable or available; it is also very much sustainable.

Plan for the future:

The school will not only implement vermicomposting and vermiculture in the community but also to continue reaching out to other schools and communities who does not have this kind of project. The proponent will conduct a vermi campaign in the municipality, in the province and in the region to encourage more people especially farmers to put up their own vermi project.

Moreover, the school will still continue to consult other departments for updates and additional information on how to better manage vermicomposting and vermiculture.

We plan to initiate "OCOOG" One Class, One Organic Garden of Vegetables". One class will select a specific vegetable and maintain its healthiness and robustness through the application of organic fertilizer .

The lectures and video presentations in demonstrations will be compiled into resource manuals like pamphlets and brochures.

The school will hold a contest on selecting the "Best Vegetable Garden" to be participated in by the students. After which same contest also to be participated in by parents. The officials from the Department of Agriculture will be invited to be the judges in the selection.

We also plan to have eco-trips to other schools and places to observe vegetable production and plant propagation. From these eco trips, we can create linkages and connections to make the project more viable and sustainable.

14. List of attachments such as a copy of the school operational plan, learning/ teaching materials, samples of student worksheet, manual, etc. If the attached materials are in the local language, please provide a brief description in English language.

- Attachment 1) YES-O Calendar of Annual Activities
- Attachment 2) Sample Lesson Plans (Integration of Topics)
- Attachment 3) Handouts on Vermicomposting / Vermiculture
- Attachment 4) Attendance of Parents during a Meeting
- Attachment 5) Sample Logbook of Monitoring Personnel
- Attachment 6) Certificate of Project Sustainability from LGU and Dept. of Agriculture

15. Photos related to the activity/programme (Maximum of 6 photos with captions in English)



Mrs. Diana M. Del Mundo emphasizes the need for Vermicomposting project in the school during the School-based Environmental Awareness campaign to students.

Photo 2



Members of the Science Club harvest organic fertilizer (vermicast).

Photo 3



Students weigh the harvested vermicast, ready for selling to farmers.

Photo 4



Volunteer parents' and students pack in sacks the vermicast for future use to be used in the vegetable gardens.

Photo 5



The proponent and selected students reach out to other schools by conducting free vermicomposting seminars to teachers and students.

Photo 6



Students apply vermicast to the newly planted vegetable seeds in the organic garden.