



Monthly Report

(November 28, 2016 to December 25, 2016 Activities)

CARBON FARMING SCHOOL

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I. Project Description

Indonesia is one of tropical countries having the world's second largest rainforest about 94,432,000 ha (Mongobay 2011) and highest level of biodiversity after Brasil (Brown 1997). However, Indonesia is recognised as one of the largest contributors to global GHG emissions because of deforestation and peat fires (Trijadipta et al. 2015). According to the Forest Watch Indonesia (2015), deforestation is estimated around 1.5 million ha/year during 2000-2009. In other hand, in 1997/98, peat land fires have contributed to 60 to 90% of the emissions resulting in smoke haze, and were major source of carbon emissions (Tacconi 2003).

Both deforestation and peat fires are brought about by oil palm plantation farming and land use sectors which exacerbate to climate change. As the result. Indonesia has initiated an international contribution on setting emissions reduction targets of 26% below business as usual by 2020, scaling up to 29% by 2030, and increasing their overall ambition to 41% with international support (Falconer & Glenday 2016). To help accelerate the international agreement, sustainability of forest and farming must be enhanced and maintained so that the carbon emission reduction target can be attained.

A carbon farming is one of the potential to implement practices that are known to improve the rate at which CO₂ is removed from the atmosphere and converted to plant material and/or soil organic matter (Carbon Cycle Institute 2016). The carbon farming has been implemented in Adelaide and Mt Lofty Ranges region, Australia for reducing emissions like nitrous oxide and methane, and sequestering carbon in vegetation and soils by changing agricultural and land management practices (Government of South Australia 2013).

Due to the advantages of carbon farming for climate change solution, the implemetation of the farming to fields must be accompanied with supporting stakeholders and finance. The supporting regards will help accelerate sustainable agriculture and forest management which is in accordance with Sustainable Development Goals, notably climate change and life on land. Supporting stakeholders can be in form of government, company, and society whereas financial supports can be gained from the same-visioned institutions on mitigating climate change.

In Indonesia, carbon farming is rarely found to be well-implemented because of several challenges, such as: lack of understanding, no support, etc. Mostly, Indonesia farmers still use conventional farming in agriculture fields without adding tropical tree species and livestock into that farming cycle. As executed to the ground, carbon farming can help accelerate the international contribution of Indonesia on carbon emissions reduction. The system must be altered through carbon farming education which is not intended solely for farmers, but also that is for children and youths.

In Indonesia urban and rural sites, children and youths play imperative roles for being educated as climate change solution-solving takers. They can be driving today's climate change causers, and will be tomorrow's decision makers and solvers. Engaging children, youths and local communities (farmers) in support of carbon farming education through awareness raising and simple action messaging could be a game changer. The education must be embedded internally to them in which the way can be in form school. Carbon School Farming Project is one of the solutions of these above-mentioned problems which are able to sustain agriculture and forestry management, besides climate change mitigation and adaptation.

From the above enumeration, we executed the second chapter of the Carbon Farming School project consisting some activities. The activities included some socialization of the project to SD N2 Jambu, SMK N 1 Pakis Aji, and Bogor Agricultural University students. The second was carried out from November 28, 2016 to December 25, 2016 at these above

institutions. Concisely, we also published some online reports to some UN agencies, including UNICEF, UNEP Tunza Eco-generation, and UNFAO. Kindly, peruse this report in detail!

II. Project Objectives

General Objectives

The objectives of this proposed project entitled Carbon Farming School are:

1. to educate children, young professionals, and local communities about sustainable agroforest management for carbon sequestration;
2. to raise awareness of children, youths and local communities about the importance of climate change adaptation and mitigation;
3. to actualize eco-friendly agroforest activities into sustainable actions for altruism.

Specific Objectives in November 16, to December 25, 2016

The specific objectives of the project in this month:

- to socialize the Carbon Farming School to targeted elementary school, vocational school, and university;
- to educate the students about the importance of the Carbon Farming School for climate change mitigation and adaptation;
- to engage the students actively and sustainably on getting involved the execution of the project.

III. Project Activities Completed (From October 1, 2016 to Nov. 24, 2016)

1. Activities (IGAF Carbon Farming School)

Several activities of the second chapter of the Carbon Farming School include: Socialization for Carbon Farming School at SD N 2 Jambu Jepara, Socialization for Carbon Farming School at SMK N 1 Pakis Aji, Laboratory visiting at Bogor Agricultural University for Carbon Farming School, Publishing online report to the UN agencies. Below are the brief explanation of the above-activities:

a. Socialization for Carbon Farming School at SD N 2 Jambu, Jepara, Central Java

In this activity, students of SD N 2 Jambu were engaged actively to be educated about the importance of carbon farming school for climate change adaptation and mitigation. There were about more than 50 students getting involved in this activity, The students were supported by their teachers to ascertain and understand what climate change issues, solution, and environmental activities were. Students learnt much more about agroforest system which would be executed to the ground. In this activity, several activities carried out which were:

1. Carbon Farming Gymnastics

Simple and plain gymnastics were given to students. They would not only be stressed with theories but also practical and enjoyable regards, including gymnastics (Figure 1).



Figure 1. Gymnastics before socialization and education

2. Students' Games

SD N 2 Jambu students were then joyful to be engaged for games. The games are a carbon farming yelling. The yel was created and played by the students with a core message a core climate change solutions for better future of Indonesia. Children and youths played an imperative role for looking for the solutions (Figure 2). Below are the pictures:



Figure 2. Carbon farming games

3. Carbon Farming Education

In this activity, the students were educated simply and concisely about carbon farming school and plannings for further execution on the ground. In this education, the students were verily happy and enjoyful to take the learning. Asks and Questions were awarded to the students who had curiosity on understanding in detail about carbon farming. A new system for sustaining agriculture and forestry which is agroforest system was taught to the students. In addition, the way to plant properly seedlings was given. Lauging and smile of the students occurred during the learning. It was truly ensuing and will be sustained for further execution (Figure3).



Figure 3. Socialization and education about carbon farming school

4. Closing Activity and Photos

After the above-activities done, we continued to take pictures together. In this session, we tried to do 'selfie' which was intended to engage more students to care to the environment and ward off climate change. In addition, this capturing will be intended for persuading other students on joining this programme (Figure 4).



Figure 4. Closing ceremony and photo session

b. Socialization for Carbon Farming School at SMK N 1 Pakis Aji, Jepara, Central Java

In this activity, students from SMK N 1 Pakis Aji were socialized about carbon farming school and how to implement agroforest system for better livelihood for local farming. In addition, the students were firstly to know what carbon and agroforest system. Since the program was in accordance with the school curriculum, they felt enjoy and happy to know the project, and wanted to implement the program as soon as possible. At preliminary stage, we educated the students about environment, climate change, carbon stock and trade, biocomposite technology, and agroforest system. In addition, the explanation about the next and further planning for the Carbon Farming School was given in the socialization.

There were about ten vocational school teachers of SMK N 1 Pakis Aji who involved in the project, including the headmaster of SMK N 1 Pakis Aji. The teachers were so happy to collaborate with the Indonesian Green Action, notably on spreading the message of raising environmental awareness for the students. In addition, this was a great opportunity for the school to know an international program on climate change mitigation and adaptation (Figure 5). The students getting involved in the project was about 80 students.



Figure 5. Introduction of Carbon Farming School for SMK N 1 Pakis Aji, Jepara

c. Laboratory Visiting at Bogor Agriculture University, Bogor, West Java

In this activity, students of Bogor Agricultural University took a biocomposite technology course and environmental english class. There are several sub-themes of the course, including introduction of Carbon Farming School, biocomposite technology, climate change and forest (wood waste), and forestry realms. The visiting of laboratory was conducted at Laboratory Biocomposite of Forest Products Technology Department, Forestry Faculty, Bogor Agricultural University. You can find the detail place: <http://ipb.ac.id/faculty/index/faculty-of-forestry/department-of-forestry-products>. There were about 30 students getting involved in the courses and I taught them about the courses. The most important of the visiting was the introduction of biocomposite technology for supporting carbon farming school project in which the utilization of wood waste can reduce carbon release.

What is biocomposite? In fact, biocomposite materials coming from forestry and agricultural wastes are not new to the world. There are several kinds of biocomposite which are oriented strand board, cement board, particle board, fiber board (hardboard, medium density board, insulation board) and LVL. Yet, solid woods have been widely utilized to obtain particle board but wood waste and agrofiber waste have been narrowly used and been developed in wood industries due to limited information on how to produce particle board well with high quality and recovery. In nature, wood and agrofiber are naturally occurring composites consisting of cellulose fibers (reinforcement) in lignin (matrix). Composites having superior properties such as high modulus, and creep, impact, and heat resistance have replaced steel, concrete, and wood in transportation, building/construction, engineering, marine, aerospace, and chemical industries. In other hand, the utilization of biocomposite board is caused by the global environmental concerns for materials that are biodegradable. Accordingly, it would be desirable to provide composite systems that (1) are biodegradable in the environment, (2) are thermoplastic so that they can be moulded, cast, extruded, or otherwise melt-processed into various forms including films, fibres, coatings, and foams, (3) can be manufactured at reasonable cost, (4) have sufficient toughness, strength and stability during use. Further information, please click this link: <http://tunza.eco-generation.org/ambassadorReportView.jsp?viewID=3790>.

As the proofs of the visiting laboratory, please find the following pictures:





Figure 6. Introduction of Carbon Farming School and visiting laboratory at Biocomposite Laboratory, IPB

d. Publishing online report to the UN agencies

After conducting several above activities, we want to publish the results to several partners and UN agencies-based platform. It is intended to embody the objectives of the Carbon Farming School. Below are several organisations used for publishing our project reports:

1. UNEP Tunza Eco-generation

There were several positive responses from Tunza Eco-gen members. They did like the project and wanted to participate in the project. Please find the proof:

<http://tunza.eco-generation.org/worldReportView.jsp?viewID=42118&searchType=&searchName=&pageNumber=1>

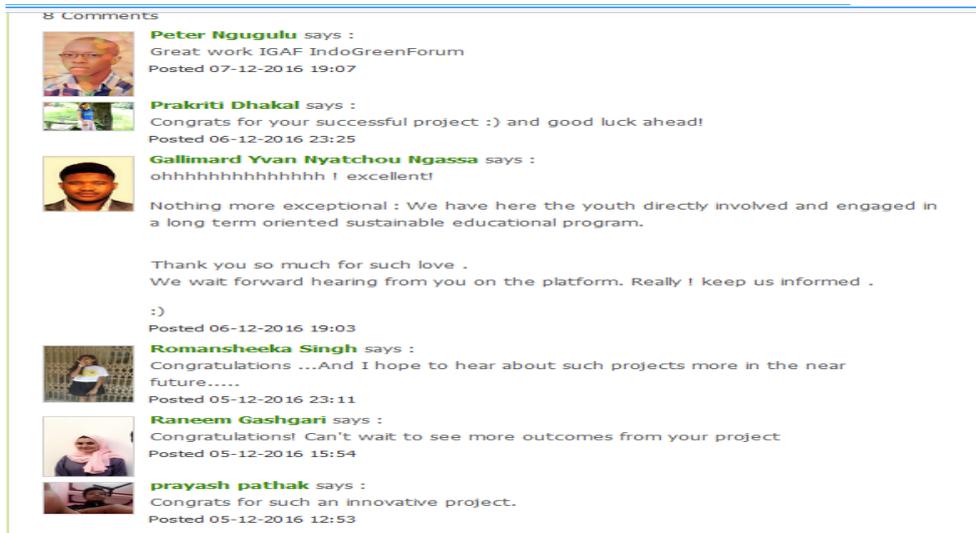
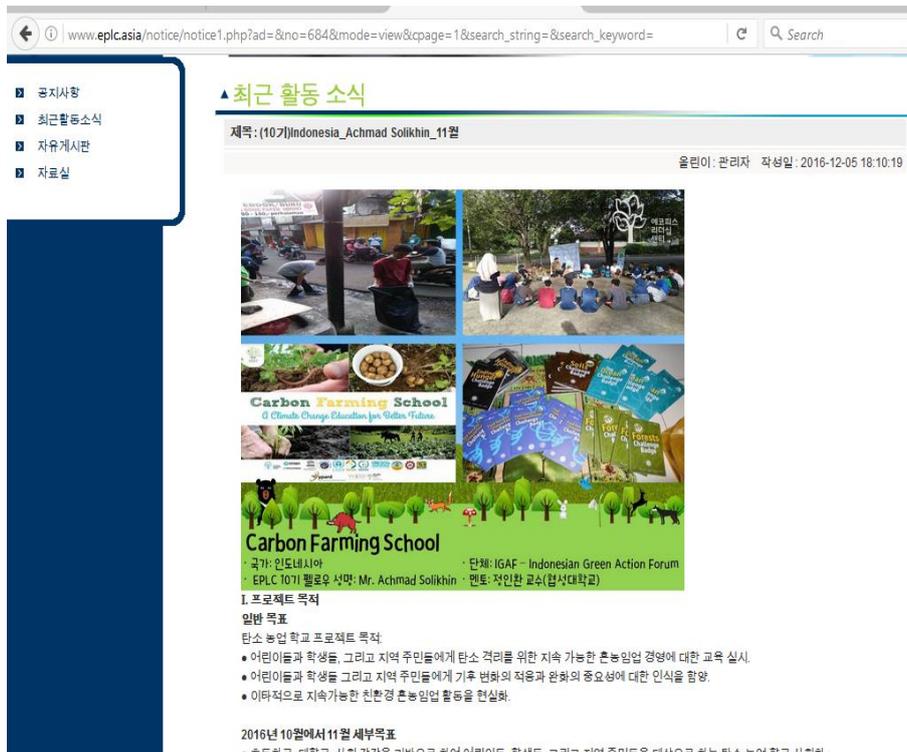


Figure 7. Publication at Tunza Eco-generation

2. UNEP EPLC

UNEP EPLC secretariat has published the report and I tried to spread the link to our circles, as the result most of Indonesia youths liked and saw the report. There are about 145 viewers in EPLC Website: <http://www.eplc.asia/notice/notice1.php> or http://www.eplc.asia/notice/notice1.php?cpage=1&search_string=&search_key word=



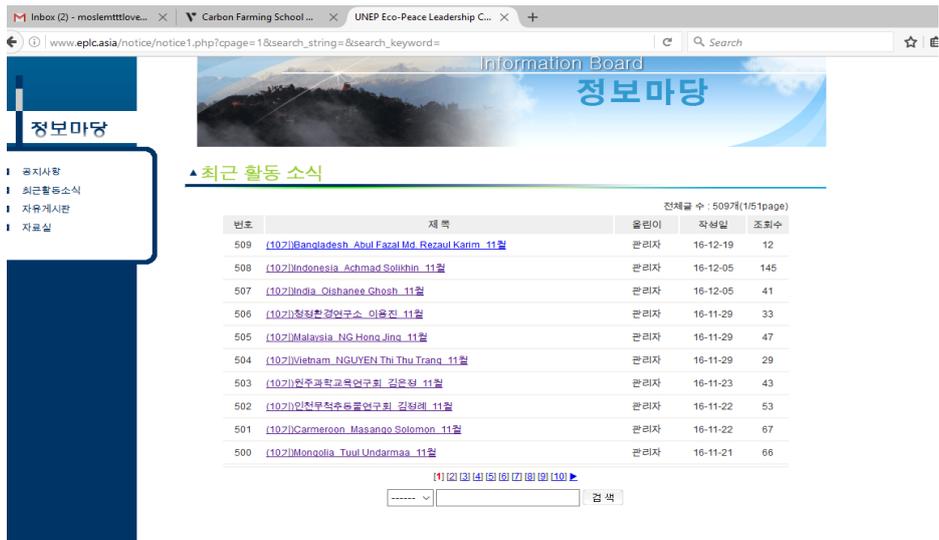
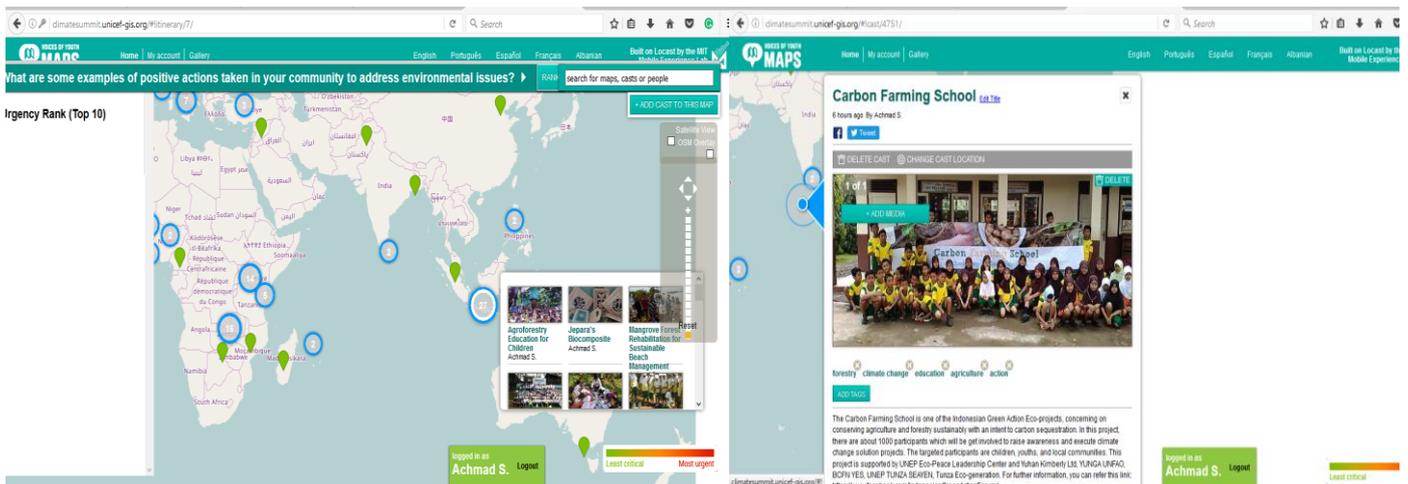


Figure 7. Publication at UNEP EPLC

3. UNICEF Climate Change Map

As a member of UNICEF Climate Change Map, I exchanged and spreaded the result of the project. Most of ecological projects are from the Indonesian Green Action Forum. It means IGAF is very active platform on environmental conservation. In addition, at UNICEF Climate Change Map Website (<http://climatesummit.unicef-gis.org/#!cast/4751/>), the projects are dominated by the IGAF eco-projects. This publication will help the acceleration of COP22 outcome, Marrakech, Morocco 2016.



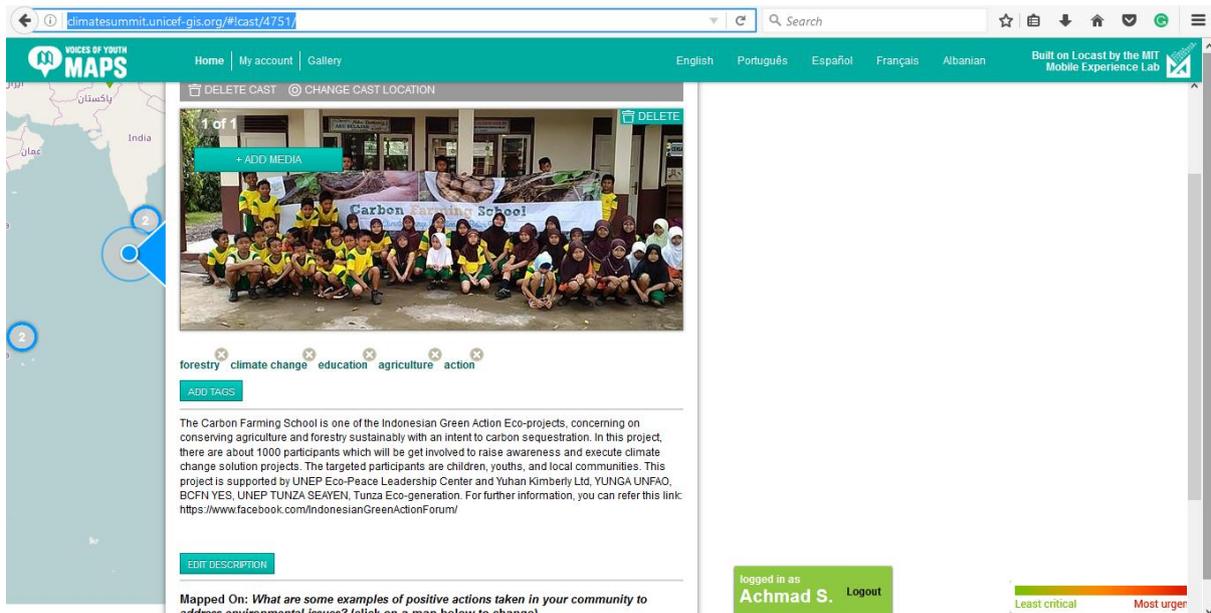


Figure 8. Publication at UNICEF Climate Change Map

4. UN Sustainable Development Goals

This is one of the ways to accelerate the achievement of Sustainable Development Goals. Our organization, IGAF and UNEP EPLC, Yuhana Kimberly Ltd, are contributed to the way so that we spread the result of the Carbon Farming School Project to UN agencies, especially UNSDGs. However, the secretariat of UNSDGs has not confirmed the result and still waited the approval. For a proof, you can log in our account by:

Email : inagreenforum.eplc2016@gmail.com

Password : pKrCJ8a

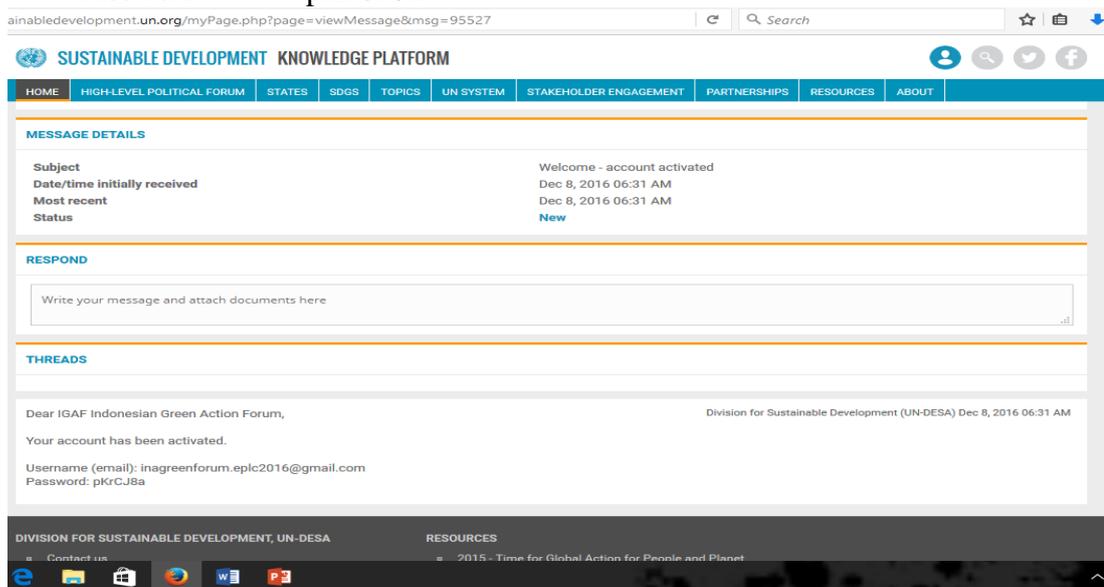


Figure 9. Publication at UN SDGs website

5. IGAF Fanpage

As usual, we always keep update the resut of the project in our Fanpage: many more comments and tremendous linke from viewers regarding the interest to the project.

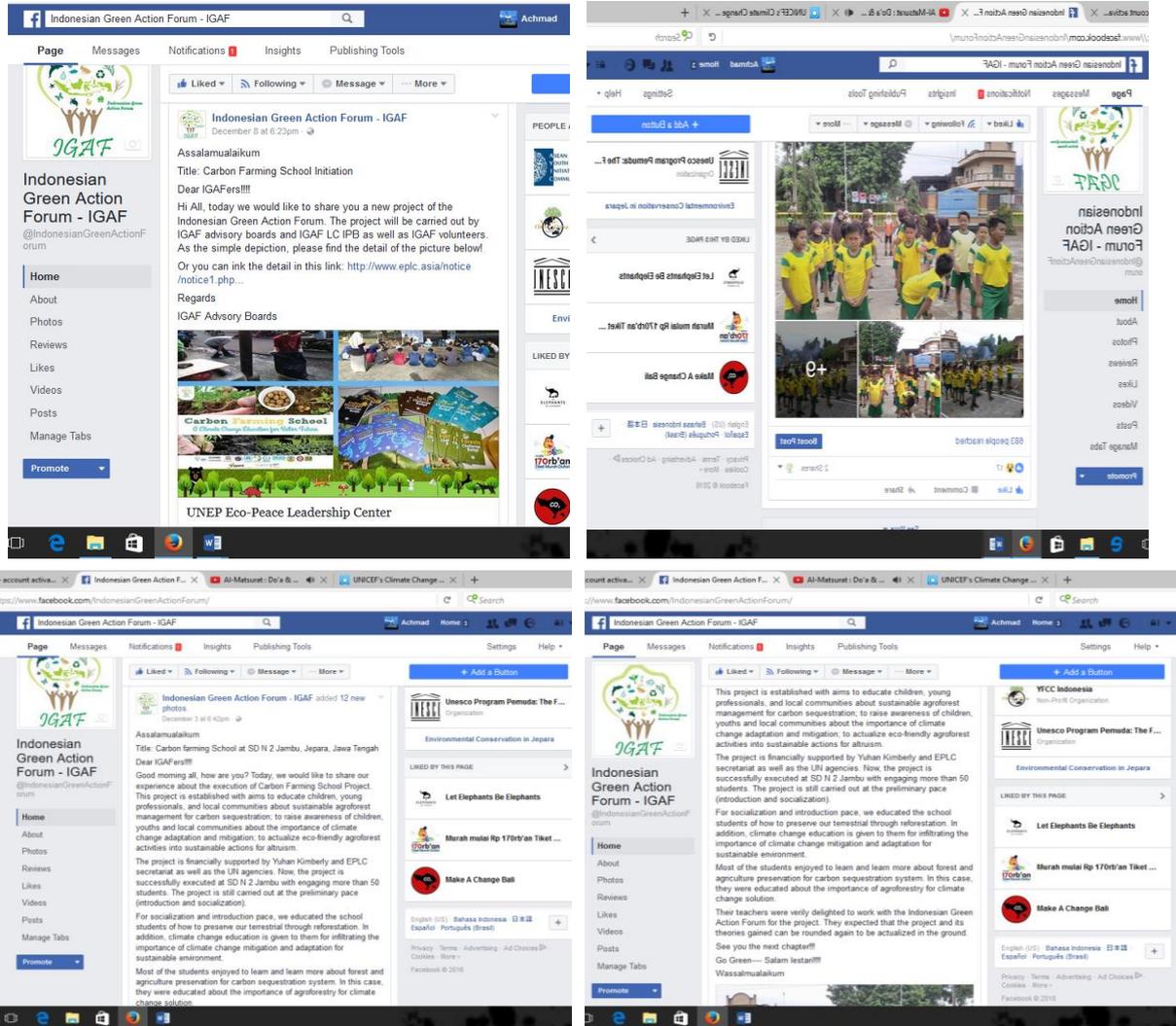


Figure 8. Publication at IGAF Fanpage for SD N 2 Jambu

6. UNICEF Voice of Youth

Like UNICEF Climate Change Map, I used the website of UNICEF Voice of Youth to spread the result of the project to other youths around the world. Find the detail in this link: <http://www.voicesofyouth.org/en/posts/carbon-farming-school>.

Today, we would like to share our experience about the execution of the Carbon Farming School Project. This project is established with aims to educate children, young professionals, and local communities about sustainable agroforestry management for carbon sequestration; to raise awareness of children, youths and local communities about the importance of climate change adaptation and mitigation; and to actualize eco-friendly agroforestry activities into sustainable actions for altruism. The project is financially supported by Yuhana Kimberly and the EPLC secretariat, as well as UN agencies.

In this activity, students of SD N 2 Jambu were engaged actively to be educated about the importance of carbon farming at school for climate change adaptation and mitigation. There were more than 50 students getting involved in this activity. The students were supported by their teachers to ascertain and understand what climate change issues, solutions, and environmental activities were. Students learned much more about agroforestry systems which would be executed on the ground. In this activity, several activities were carried out, which were:

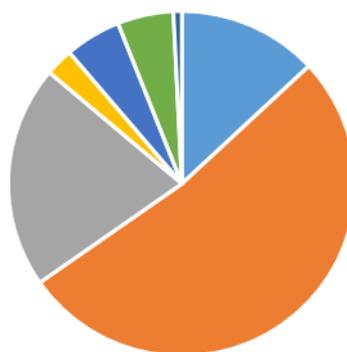
- Carbon Farming Gymnastics – simple and plain gymnastics regards, including gymnastics
- Students' Games - SD N 2 Jambu students were then joyful to be engaged for games. The games are a carbon farming yelling. The yell was created and played by the students with a core message a core climate change solutions for a better future of Indonesia. Children and youths played an imperative role for looking for the solutions.
- Carbon Farming Education - In this activity, the students were educated simply and concisely about carbon farming at school and planning for further execution on the ground. In this education, the students were verily happy and joyful to take the learning. Students who had curiosity on understanding in detail about carbon farming were awarded. A new system for sustaining agriculture and forestry which is agroforestry.

Figure 8. Publication at UNICEF Voice of Youth

e. Data analysis of attendee or participants of the projects

No.	Participants	Months	Total of participants
1.	Students and teachers at Elemetary School SD N 2 Jambu Jepara	October – November 2016	50 students
2.	Students at Bogor Agricultural University	October – November 2016	200 students
3.	Students at Vocational School SMK N 1 Pakis Aji	November – December 2016	80 students
4.	IGAF Standing Boards	November – December 2016	10 persons
5.	IGAF volunteers	November – December 2016	20 persons
6.	IGAF LC IPB	November – December 2016	20 persons
7.	Local communities at SD N 2 Jambu, Jepara	November – December 2016	3 persons
TOTAL			

Carbon Farming School Participants (October to December 2016)



- Students and teachers at Elementary School SD N 2 Jambu Jepara
- Students at Bogor Agricultural University
- Students at Vocational School SMK N 1 Pakis Aji
- IGAF Standing Boards
- IGAF volunteers
- IGAF LC IPB
- Local communities at SD N 2 Jambu, Jepara

2. Any change in Proposed Project Schedule or Activities?

No (There is No change for the schedule and activities proposed in the Carbon Farming School Project). The detail of the project activities and tentative schedule is as follows:

No.	Activities	Tentative schedule	Place
1.	Publishing the 2nd phase of Carbon Farming School to UN agencies website	25-30 December 2017	Shizuoka University, Japan
2.	Seedling distribution to local communities around targeted school (social forestry for carbon farming school)	January 02, 2017	Bogor City, Indonesia
3.	Welcoming new IGAF volunteer and members for Carbon farming School Wave II	January 04, 2017	Bogor Agricultural University, Indonesia
4.	Introduction for Carbon Farming School in Action at Bogor Agricultural University Students	January 10-15, 2017	Bogor Agricultural University, Indonesia
5.	Analysis of these above-activities	January 15-20, 2017	Bogor Agricultural

			University, Indonesia
6.	Project reporting and publication both in EPLC and IGAF website	January 21-24, 2017	Online media, Indonesia

Project Plans in January 2017

Future Plans of the Next Month

1. Activities

There will be several proposed activities, including:

- a. Publishing the 2nd phase of Carbon Farming School to UN agencies website. It will extend and promote the importance of Carbon Farming School project to children, youths, and other communities. By this case, it will help increase the environmental awareness among them.
- b. Seedling distribution to local communities around targeted school (social forestry for carbon farming school). Seedling distributions will be carried out for embodying social forestry and introducing the importance of tree for carbon storage.
- c. Welcoming new IGAF volunteer and members for Carbon farming School Wave II. It will help to introduce the new members and volunteers of IGAF Carbon Farming School. Most of the volunteers are from Bogor Agricultural University.
- d. Introduction for Carbon Farming School in Action at Bogor Agricultural University Students. Introduction for Carbon Farming School is intended to educate youths (students at IPB university) of how to execute the Carbon Farming School and its roles.
- e. Project reporting and publication both in EPLC and IGAF website. It will help to publish annually the progress report of the Carbon Farming School to IGAF fanpage and EPLC website.

2. Contents

There will be several proposed activities, including:

- a. Publishing the 2nd phase of Carbon Farming School to UN agencies website. The execution of the Carbon Farming School at SMK N 1 Pakis Aji and the upcoming sub-activities of the School will be published in IGAF partners, such as: UNEP TUNZA, UNICEF Voice of Youth, UNICEF Climate Change Map, etc. It will help promote the environmental awareness of children, youths, and local communities about the importance of Carbon Farming School. It will include online publication.
- b. Seedling distribution to local communities around targeted school (social forestry for carbon farming school). Some species of tree seedlings such as: albizia, mahogany, and teak woods will be distributed to local communities.

The distribution will engage local communities in which these seedlings will be benefited for agroforestry program. The distribution of local tree species will be used for conservation program.

- c. Welcoming new IGAF volunteer and members for Carbon farming School Wave II. Welcoming the IGAF members will be conjoined with welcoming of IGAF Carbon Farming School volunteers. It will be intended to introduce the plannings of the Carbon Farming School.
- d. Introduction for Carbon Farming School in Action at Bogor Agricultural University Students. The introduction will be given to IGAF Carbon Farming School volunteers and Bogor Agricultural University students. It will help deepen their understanding and skills o fhow to implement the Carbon Farming School to the ground. It will be approximately engaging more than 250 participants.
- e. Project reporting and publication both in EPLC and IGAF website. The most important publication are at IGAF Fanpage and EPLC website. It can be found here: <https://www.facebook.com/IndonesianGreenActionForum/> and http://www.eplc.asia/en_main.htm.

References:

- AruPA. 2016. Menghitung cadangan karbon di hutan rakyat: Panduan bagi para pendamping petani di hutan rakyat. Yogyakarta: Biro Penerbit ARuPA.
- Brown, Lester R. (1997). State of the World 1997: A Worldwatch Institute Report on Progress Toward a Sustainable Society (14th edition). New York: W. W. Norton & Company. p. 7.
- CCI [Carbon Cycle Institute]. (2016). Carbon Farming: Increasing fertility & water holding capacity & providing solutions for climate change. Carbon Cycle Institute and Fibershed.
- Dharmawan IWS. 2014. Inventarisasi Carbon Hutan Berbasis Pengukuran Lapangan (SNI 7724-2011) dan Penyusunan Persamaan Allometrik untuk Pendugaan Cadangan Karbon Hutan Berdasarkan Pengukuran Lapangan (SNI 7725-2011. Lokakarya Sinergitas Program dan Kebijakan Provinsi Nusa Tenggara Timur dalam Mitigasi Perubahan Iklim serta Pembangunan dan Pengelolaan PSP.
- Falconer, A., Glenday, S. (2015). Taking stock of international contributions to low carbon, climate resilient land use in Indonesia. CPI: Climate Policy Initiative.
- FAO. 2005. Carbon Content of Vegetation. <http://www.fao.org/forestry/17111/en/>.
- FWI [Forest Watch Indonesia]. (2015). The state of forest report in Indonesia: The condition, problems and challenges. Bogor: Forest Watch Indonesia (FWI).
- Government of South Australia. (2013). Carbon farming initiative. Department of Climate Change and Energy Efficiency: Australian Government.
- Jane A. 2016. Forest and Wood Products Australia. How is carbon stored in trees and wood products?. Australia.
- Mongobay. (2011). Indonesia forest information and data. Available on: www.rainforests.mongobay.com/deforestation/2000/Indonesia.htm. Downloaded on 02 October 2016.
- Sutaryo D. 2009. Penghitungan Biomassa: Sebuah pengantar untuk studi karbon dan perdagangan karbon. Wetlands International Indonesia Programme.

Tacconi, L. (2003). Fires in Indonesia: Causes, costs and policy implications. CIFOR Occasional Paper No. 38. Bogor: CIFOR [Center for International Forestry Research].

Tripadipta, A., Broecker, H., Wardah N., Munzinger P., Wiese R. (2015). Climate and biodiversity protection in Indonesia: Activities implemented by GIZ as part of the International Climate Initiative (IKI). GIZ Indonesia.

https://en.m.wikipedia.org/wiki/Jepara_Regency (Jepara Regency). Accessed on 15 October 2016.

https://en.m.wikipedia.org/wiki/Bogor_Regency (Bogor Regency). Accessed on 15 October 2016.

<https://www.compactofmayors.org/cities/bogor> (Bogor Regency). Accessed on 15 October 2016.