Future Perspective of REDD+ Implementation and the National Forest Policy in Indonesia

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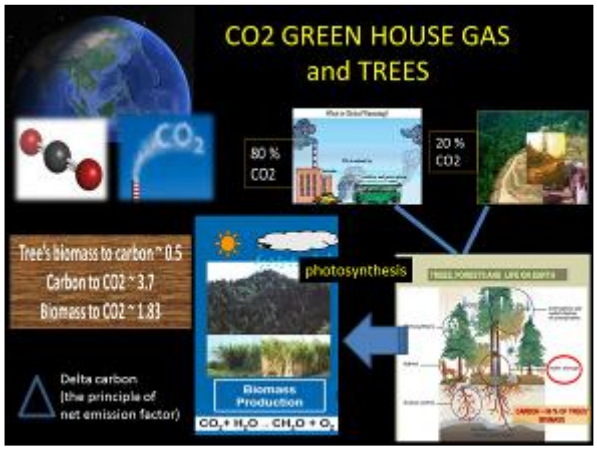
I am trying my best to deliver some real picture of Indonesia within the dynamics of the world, even though yesterday, we already heard some global discussion looking so complicated probably, but now I will try to simply the picture for Indonesia.

I am going to talk about the forest principles and climate change because there are still so many gaps, probably not for us forester or colleagues in forestry, but in the world there are still a lot of gaps. Global update somehow, some latest notes from bilateral because here we are in Japan, and how Indonesia explains and fulfills the gaps and how there should be world companionship in the future.

Just a little bit here about climate change, why forests? Because source of emission, (mainly CO_2 or methane), or carbon conservation. Of course, balance of terrestrial carbon or solid C and sustainable management of forests for services and green products as well. Of course, there is also enhancement of forest carbon stock. Mainly the Bali Action Plan[1] mentions the CO_2 cycle related to the forest. I believe that we could say that the Bali Action Plan gives us more comprehensive force to mitigate and adapt climate change.

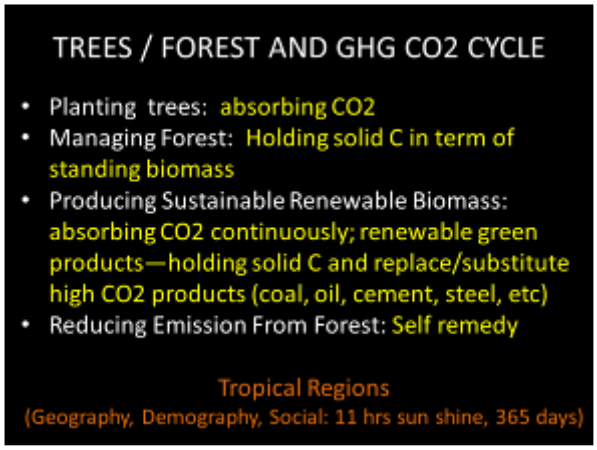


This is the basic role of forests or trees in dealing with CO_2 cycle. Mostly we are talking about 20% of CO_2 global emissions that have be cured by forests, but actually the role of forests is not only that. The forests could also absorb 80% of CO_2 that comes from burning fossil fuel, and then through photosynthesis, forests will act as an agent of change CO_2 into carbon.

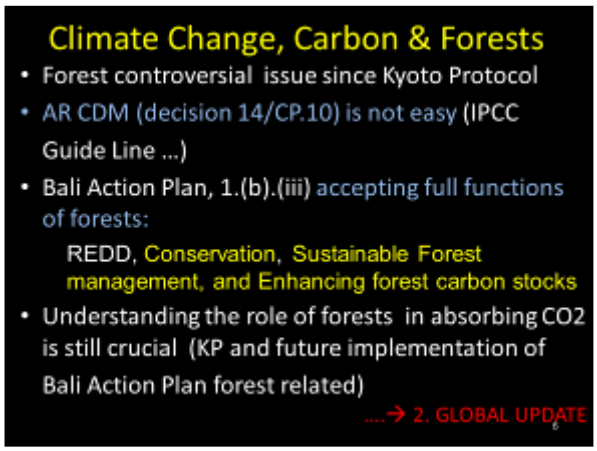
What is important here is how to interpret the biomass into CO_2 equivalent. That is very easy when we come to a very simple formula. Trees' biomass to carbon is just time 0.5 and carbon to CO_2 3.7 and biomass to CO_2 1.83. This is from IPCC. What do we need in our effort? To mitigate or adapt the climate change through forests or trees is to know the delta of carbon. This is the

[1] http://unfccc.int/resource/docs/2007/cop13/eng/06a01.pdf

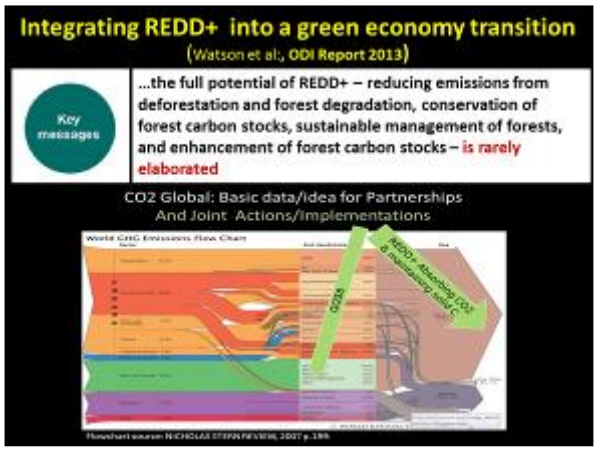
principle of net emission factor.



This is just to simplify about the trees. When we are planting trees that means absorbing CO_2 ; managing forest means holding solid C in terms of standing biomass; producing sustainable renewable biomass means absorbing CO_2 continuously, renewable green products and holding solid C and replace or substitute high CO_2 products such as coal, oil, cement steel, and etcetera. Of course, forests also do self-remedy. In tropical region, not only in Indonesia, other countries also, in terms of geography, demography, and social, we have 11 hours sunshine 365 days to convert CO2 into biomass.

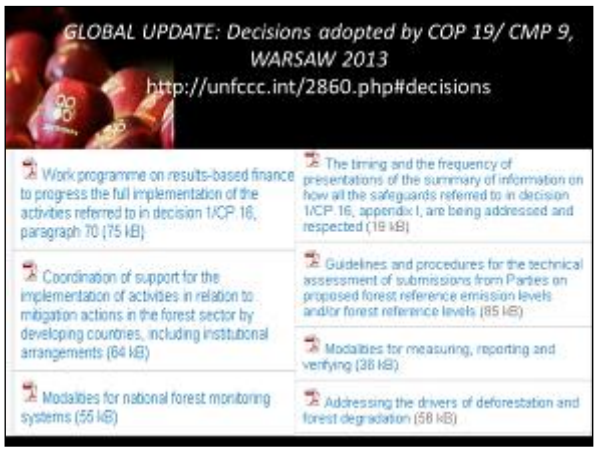


These are some notes. Climate change, carbon, and forests is a controversial issue, we are aware of that. It is very difficult. A/R CDM or LULUCF, it is not easy, and we come to Bali Action Plan accepting full function of the forests: REDD, conservation, sustainable forest management, and enhancing forest carbon stock. Understanding the role of forests in absorbing CO_2 is still crucial, and I think this is one of our challenges.



How to integrate REDD+ into a green economy transition: this is some reference from Watson, "…the full potential of REDD+ – reducing emissions from deforestation and forest degradation, conservation of forest carbon stocks, sustainable management of forests, and enhancement of forest carbon stocks – is rarely elaborated." I think this is a nice time that we share together here.

Also, how we could join together between developed and developing countries around the world. I took this chart from Nicholas Stern Review, even though that is 2007 I think the statistic is still working. Only about 18% comes from LULUCF or say 20%, but the other CO_2 source is from energy burning at about 77%. This is a role that trees and forests could play and how we could do our work together.



This is another important message from global from Warsaw, a high-level event on the land sector and forests where the world leaders again support forests and land sector in principle.

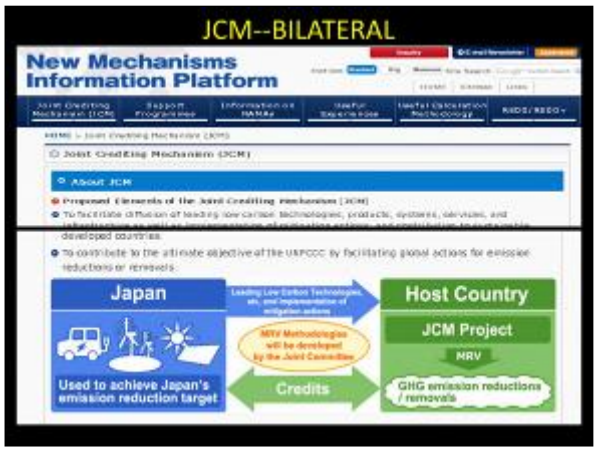
Yesterday it has already been talked by a couple of presenters, the 300 years forests from in Unasylva.

What I would like to mention here comes from 300 years ago, and for next 300 years, we need

innovation continuously and tree cracking, not only as a tree or biomass, but to nanotechnology. For sure, we need fresh water, wood energy, raw materials, wood and wood fiber, buffer against changing environmental condition, sustaining forests, and what kind of management, broader knowledge and discipline that we need for the future.

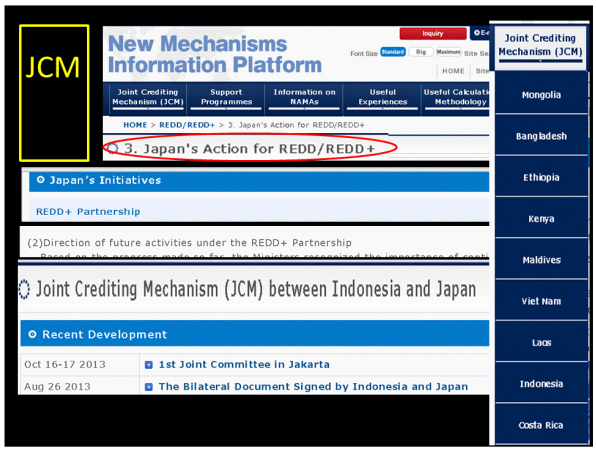
Talking about Indonesia, this is the basic of Indonesia safeguard of our forests. Safeguard is not only the term for activities, but safeguard also for our earth; safeguard also for our forests. Indonesia has introduced Forest Land Use System even when they were a Dutch Colony, so not only right now. We have conservation forests and protected forests. What it mean for climate change is terrestrial carbon stock; flora, fauna and ecosystem. We have production forests. In terms of climate change, this is carbon neutral. This is a giant CO_2 vacuum cleaner, not only for Indonesia, not only for locals, but also for global. We are also a giant manufacturer of green renewable biomass or energy, and etcetera. There is huge value added for the benefit of global through implantation of sustainable forest management, and innovation to enrich processes of nature, say photosynthesis. Forests on other land use in Indonesia, this is for local system, ecosystem support, water and clean air and also source of local economy; renewable energy plantations.

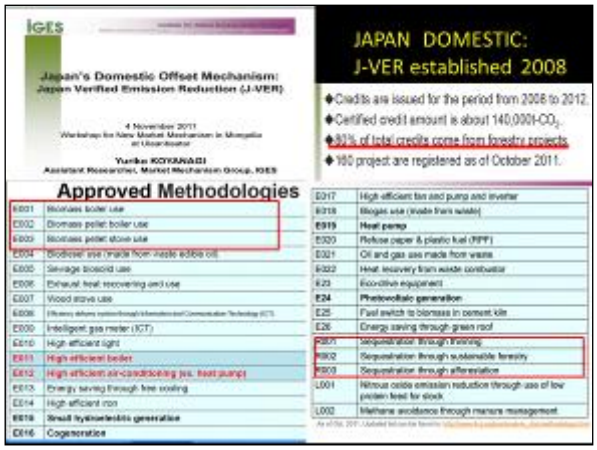
Here are some hints if someone would like to hear about the history of Land Use System, you can search for it on YouTube[2].



I will talk about bilateral relations with Japan. We are a part of Japan JCM, Joint Crediting Mechanism.

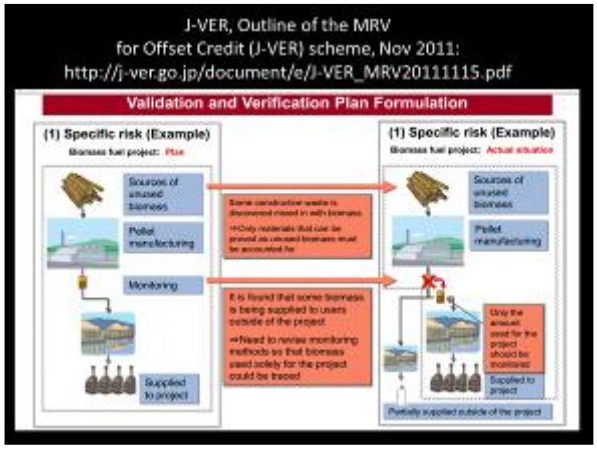
[2] http://www.forestforlife.web.id/2012/12/forest-landscape-restoration-enhancing.html





This is the REDD+ action between Indonesia and Japan.

This is a really nice experience of Japan here through J-VER[3]. There are at least six projects under J-VER are related to forests. Here the data between 2008 and 2012, 80% of total credit comes from forestry projects. I believe that Japan has rich experience through J-VER.



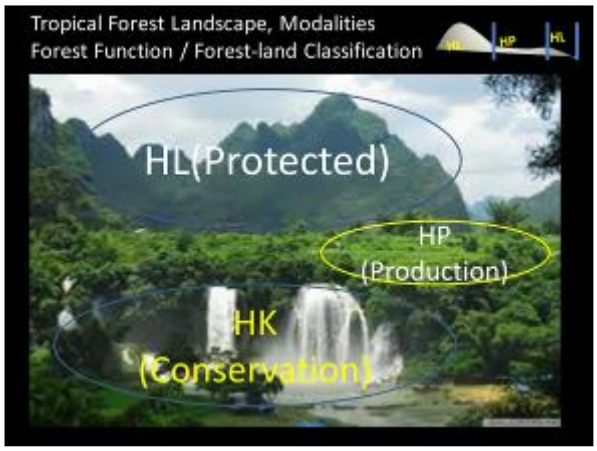
[3] Japan Verified Emission Reduction: http://www.j-ver.go.jp/e/about_jver.html

This is one of the examples. MRV for carbon Offset Credit related to Biomass.

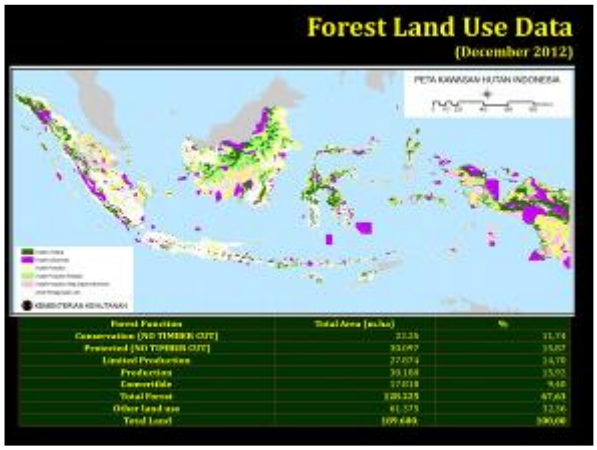
This is a chronology of Indonesia forests going back to the Dutch colonial period, and when Japan came to Indonesia, they created the *Ringyo Chuo Jimusho*, but those were until '45. Then, Indonesia Law No. 1, this is to open for foreign investment and also domestic investment. In 1984, about 80% of our products went through Japan market through NIPINDO and APKINDO[4].

This is just the picture of the basic land-use planning in Indonesia. This is a profile of service of our time and curing our problem for the better of the forest, because we already adopted this forest land use system a long time ago. Now it has become more important for MRV reference level and reference emission level or national forest monitoring system and also finance, as mentioned yesterday.

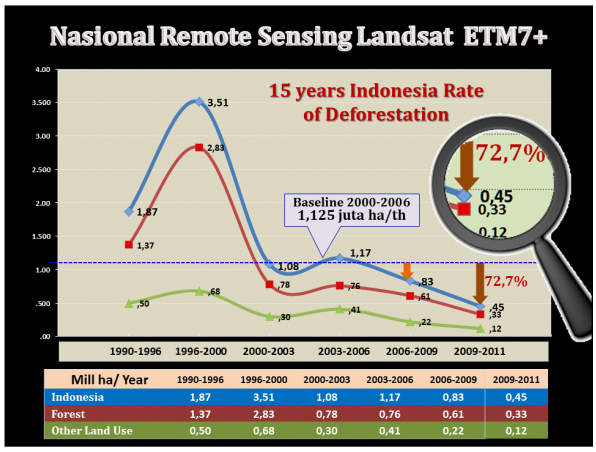
[4] Indonesian Wood Panel Association



What is the basis of Forest Land Use System? This is a very simple basis for Indonesia. Indonesia is small island tropical country. We have to take care of our land use system. Where are the protected forests? They are on mountains and hills. More than 40% of slope is going to be protected forests. It is not allowed by law to cut timber in that kind of forest. For conservation, when we have flora, fauna, uniqueness and ecosystem, we border them as conservation forests. Production forests are the rest of the forests that is mostly in flat areas.



This is a map of the forest land use system.

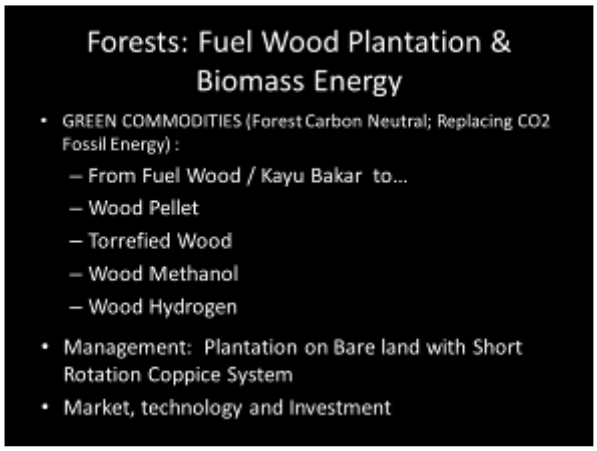


Mill ha/ Year	1990-1996	1996-2000	2000-2003	2003-2006	2006-2009	2009-2011
Indonesia	1,87	3,51	1,08	1,17	0,83	0,45
Forest	1,37	2,83	0,78	0,76	0,61	0,33
Other Land Use	0,50	0,68	0,30	0,41	0,22	0,12

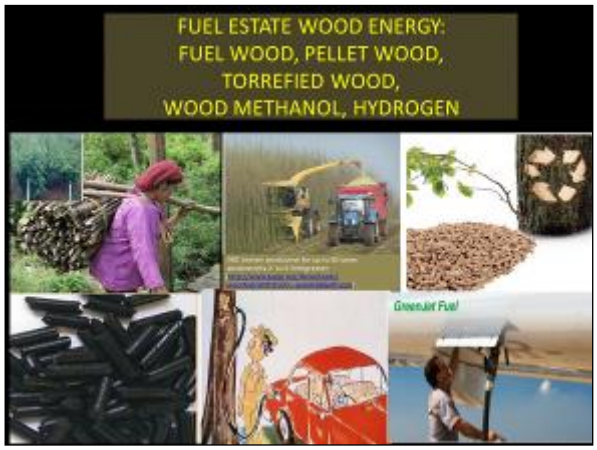
We try to prove ourselves by what we are doing so far. This is a remote sensing Landsat ETM7. We had a very bad condition between '96 and 2000 with a very high rate of deforestation of almost 4 million hectares per year. Now, only in 3 years, the rate of deforestation went down to 1.08 mill ha per year, we found out what is really the driver of deforestation. This is remote sensing data. Anyone can test it again whatever the remote sensing is. From 2009 to 2011, the data shows a deforestation rate of 0.45. This year we have a bit higher at 0.6. This is a picture of our effort.

This is just to show you the remote sensing that I just presented. This has been examined by almost 50 national and international experts from international and national gathering in Jakarta coordinated by the REDD+ Task Force[5]. That is very famous person that is Pak Kuntoro. This is just how Indonesia shows our results so far. You could get this data from our web GIS interactively.

[5] http://www.satgasreddplus.org/en/



Next is fast track; how to link forests and climate change in two windows for the world. One window is sustainable forest management, and the other window is biomass energy. This is one example. Green commodities: forest is, of course, carbon neutral, cannot release emission more than what trees absorb during the lifetime. What is that for? From fuel wood, or what we call it in Indonesia *Kayu Bakar,* to wood pellets, to torrefied wood, to wood methanol, and wood hydrogen. What we need is management, more plantations on bare land with short rotation coppice system. We need a market, of course, technology, and investment. This is an example of nice synergy shared between developed and developing countries.



This is what we did in Indonesia. This is a long time ago with fuel wood, and now new technology is available. The second picture is, I think, from Europe. This is pellet wood, the black one is torrefied wood, and the next is wood methanol, and then GreenJet fuel.

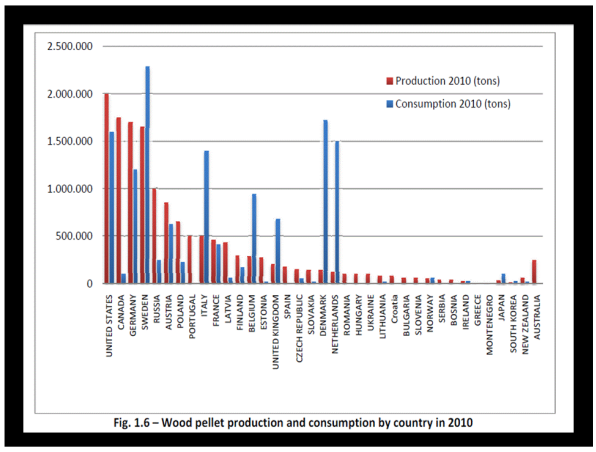
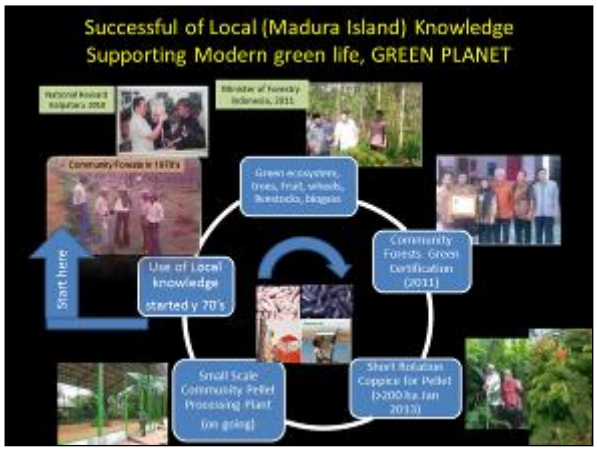


Fig. 1.6 – Wood pellet production and consumption by country in 2010

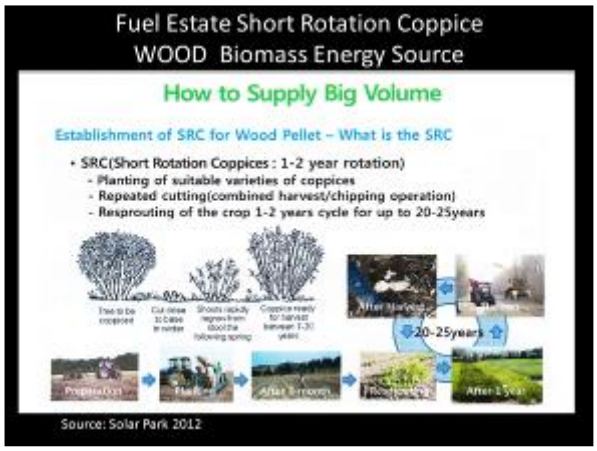
This is the consumption of pellets in the world. Japan probably could increase their use of pellets.

This is the current use of pellets in the world.



This is an example in Indonesia of a local successful story of Madura, a small island in East Java. Starting from 1970, they re-greened the bare land, and got the Green Certificate from Indonesian Ecolabelling Institute. Now we promote short rotation coppice of red calliandra species for fuel wood. This is the building for the manufacturing of pellets. We are working on manufacturing itself.

These are the local people doing the work, carbon accounting, and things like that.

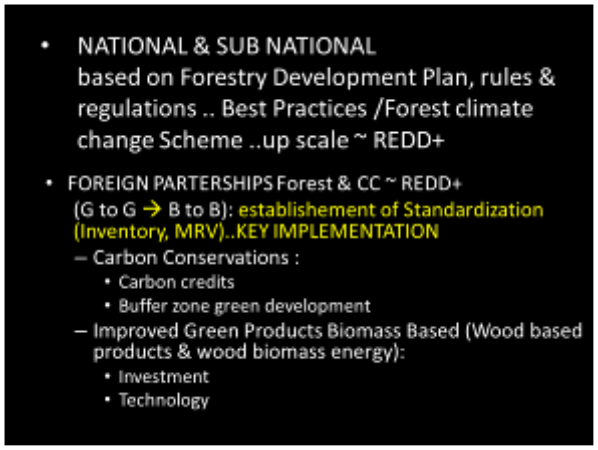


This short rotation coppice could stay until 20-25 years. First cut could be after two years, and the next every year.

This is just a picture of Short Rotation Coppice and the address of Web Site.

What is the possibility of pellet and torrefied wood substituting coal? Raw materials: fuel

wood from bare land in a very short time, and it could produce torrefied wood. There is data 2013, new biomass energy shipped from US to Europe. Future investment for raw materials and technology is needed.



National and sub-national, based on Forestry Development Plan, rules and regulation is available in Indonesia. Best practices: I already showed some for Forest and Climate Change Scheme, what we need is to scale up the best practices in terms of REDD+. Foreign partnership, forest and climate change in terms of REDD+ is very crucial; very needed by Indonesia, by other tropical countries, and other forest countries. G to G[6] and B to B[7] to establish standardization. One gap is the establishment of standardization (inventory and MRV) is the key to implementation. Two things here: carbon sequestration could be for carbon credit, could be buffer zone, green development, and improved green products biomass based, wood-based products and wood biomass energy need investment, technology, and market.

[6] Government to Government
[7] Business to Business

Come and join greening the one planet earth together through sustainable forest management and green renewable biomass.