

# ACMECS Bioenergy 2015

Three Years of Efforts Towards  
a Regional Bioenergy Network

March 2016



## **EXECUTIVE SUMMARY**

ACMECS BIOENERGY 2015

THREE YEARS OF EFFORTS TOWARDS A REGIONAL BIOENERGY NETWORK

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# EXECUTIVE SUMMARY

## ACMECS BIOENERGY 2015: THREE YEARS OF EFFORTS TOWARDS A REGIONAL BIOENERGY NETWORK

Global change, including climate change, societal dynamics, economic challenges, environmental protection and the need to improve livelihoods and to reduce poverty have led to a situation where national solutions must be embedded in regional strategies. The ACMECS countries Lao PDR, Cambodia, Myanmar, Thailand and Vietnam have a long tradition in collaboration across borders. Despite the cultural heterogeneity and different status of development, it can be a great advantage to address global challenges together. Biomass is seen as a promising resource for energy and industrial raw materials, but the challenge is that biomass production requires land and increased production can cause conflicts and environmental degradation. The increased demand for biomass in the recent years, coupled with the fact that the balance between domestic, regional and foreign demand for biomass is changing, requires careful attention.

As a consequence of these developments, the Kasetsart Agricultural and Agro-Industrial Product Improvement Institute (KAPI) of the Kasetsart University, Thailand initiated a process to establish a regional bioenergy network. The considerable progress was acknowledged by regional and international experts during the last meeting in December, 2015. In only three years, a basic infrastructure was set up and national coordinating teams developed the National Bioenergy Development Plan (NBDP) for each ACMECS country. The coordination of fluctuating available amounts and the scattered sources, in combination with varying qualities and types of biomass makes logistics a challenge. Regional planning and stewardship can help to ensure continuous flows which are important, especially for industrial purposes and to serve international markets.

The results show that the ACMECS countries are diverse, in terms of potentials for bioenergy crops and their diversity, in terms of the general share of renewables and also in terms of the possible share of biomass in the entire renewable energy potential. This has to be considered and potential synergies can be achieved by linking markets and interests in the entire region. An efficient network can help to balance domestic, regional and international demands, which is seen as a key challenge in biomass supply structures. A key finding was that the expectations towards the expected network functions, responsibilities and key areas of action differ and hence an efficient coordination is necessary to ensure a successful implementation. Despite all these differences, the main aims of the network are clear and it is mutually agreed that these are:

- 1.) To reduce poverty and enhance the livelihood of the rural population
- 2.) To protect natural resources and reduce deforestation, degradation and illegal logging

- 3.) To ensure a sustainable use of natural resources, with a focus on soils
- 4.) To contribute to climate change mitigation by developing a bio-economy

## ORGANIZATION

Basic infrastructure was installed during the project period from 2013-2016. The main elements of the network are the coordinating office at KAPI, Thailand and national representatives who coordinate activities in each ACMECS member country, including consultation meetings, information of stakeholders and establishing contacts to key stakeholders. The coordinating office is in charge of developing concepts on how to address key issues and subsequently coordinates the activities in the network. The development of the national bioenergy development plans (NBDP) was the first action and the proposed organizational architecture proved to be efficient.

## NATIONAL BIOENERGY DEVELOPMENT PLAN (NBDP)

The first task of the bioenergy network was to draft concepts for a NBDP. The aim of the NBDP in view of the regional bioenergy network is to provide a national development path, considering unique conditions and the current status in view of a regional strategy. These were developed in a two-stepp approach, where a number of focus-group meetings in each country collected and organized available information. In a subsequent step, the country representatives met and jointly developed a common template for the NBDP, where the information is presented in a harmonized way. The concepts revealed a number of chances but also obstacles for the implementation phase of the NBDP's. While a meaningful implementation can generate income, reduce poverty and contribute to a sustainable development and climate change mitigation, it all depends on a strong political commitment and support, as detailed in figure 1. A favourable policy framework can create a suitable



environment for private companies and smallholders to develop a business in the biomass supply chain. The region has a very high potential for biomass production with a favourable climate. A successful implementation is impossible without suitable tools for investment and these have to be provided. Especially small-scale models are seen to be the most efficient tools in the beginning and large-scale investors might take over at a later stage. Conventional tools, i.e. commercial and development banks will remain important.

*Figure 1: SWOT analysis summary for the ACMECS region based on individual analysis in each country. The focus here was laid on characteristic common issues in the entire region.*

## SUSTAINABLE LAND MANAGEMENT IS THE KEY

Sustainable land management was agreed to be the basis for the network activities. A special area of emphasis must be addressed to soils, as all biomass resources

require healthy and fertile soil for their production. In addition, biomass production can help to restore degraded sites e.g. by increasing soil organic carbon stocks and therefore contribute to climate change mitigation and the restoration of soil functions. Best management practices shall be developed and their success monitored and evaluated by the proposed network through a set of dedicated indicators. Biomass production operations need to be carried out according to a management plan which is represented by the NBDP in each country. It states clear objectives and the means to achieve them. High conservation value forests and other valuable land for biodiversity protection need to be preserved. It was agreed that energy plantations, if established on existing managed land and management follows criteria of sustainability, can indeed help to protect remaining high-value land in respect to conservation.

## THE ROLE OF CERTIFICATION AND STANDARDIZATION

International certification schemes can help to ensure sustainable practices and generate trust on the market. However, it was also mentioned that international certification schemes may be still too vague to ensure sustainable practices. Therefore, national schemes may be helpful to define sustainability on much smaller and country-specific scales that can be easily adapted based on scientific evidence.

The standardization of bioenergy commodities was discussed and it is a key factor as it ensures certain quality level and it is often required when addressing international markets. Especially commodities used for industry and international trade (e.g. woodchips, pellets) need to be certified according to a defined set of standards to avoid barriers in trade and to generate additional trust from regional customers. The development of such standards and the guidance of the standardization process can be an important function of the ACMECS bioenergy network.

## THE WAY AHEAD

International experts, including members of the IUFRO Task Force “Sustainable Forest Biomass Network (SFBN)”, have acknowledged the significant progress made over the last few years. Based on the evaluation of the current status, it is highly recommended to continue this process as the current infrastructure with the coordinating role of KAPI of the Kasetsart University (Bangkok, Thailand) has proven to efficiently address the important steps of introducing the proposed network.

A roadmap is suggested (figure 2) to continue the process in an efficient and coordinated way and to provide an overview of the most important issues. In step 1, the focus lies on the assessment of the current status which was widely addressed by the previous workshops. However, we identified a number of cases where additional information is missing, e.g. spatial data on biomass availability, potentials and also environmental services that need to be protected. In step 2, the basic preconditions for successful implementations are created by enabling a policy framework, that attracts companies and financing instruments as well as technology transfer, and the implementation of the national NBDP's. The standardization efforts should be a main issue in step 2 as well. Subsequently, in step 3, the implementation tools should be refined and growing experience will lead to better decisions which can be used to create decision support systems. Planning should be focussed on the systems level while sustainability needs to be ensured. Governmental incentives can

be refined to address specific problems and issues at this stage. In step 4, the process needs to be evaluated and for this purpose, monitoring systems need to be developed. International investment schemes may be introduced and the certification focused.

The establishment of such a network is a complex issue, but it can help to secure natural resources while a sustainable development can address a range of structural problems. It requires a thoughtful planning and a good collaboration among the ACMECS countries but also on international level to ensure the best results and to avoid any negative implications. Evidence shows that much can be done wrong when managing land and the consequences could be severe. Therefore a combination of science and policy as well as NGO's, exactly the way the network is currently operating, is the most promising way how it can be a success, for the sake of the ACMECS region and further generations.



**Figure 2:** The roadmap for further activities as proposed and discussed during the 3<sup>rd</sup> ACMECS Bioenergy workshop. The 4 main steps include a range of activities essential for the implementation of a regional bioenergy strategy. There are a large number of feedback cycles involved which are not included in this figure for clarity purposes. Individual activities may be initiated during earlier steps and they can also be active in subsequent steps. Here we try to identify the main issues and their relative temporal appearance.