

Miscellaneous

Ecosystem Restoration and Environmental Conservation Between ASEAN and Republic of Korea

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Abstract

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The ASEAN-Korea Environmental Cooperation (AKECOP) was initiated in 2000 aimed at enhancement capacity of member countries in the ASEAN region in managing their ecosystem and improvement of local livelihood with participating institutions in each ASEAN Member States (AMS). AKECOP researchers implemented regional research dealing with restoration of degraded ecosystems, agroforestry, biodiversity conservation, biomass, and mangrove conservation. In addition, it was also good opportunity for Koreans to understand tropical forest ecosystem and enhance their research capacity through the collaborative research activities. Furthermore, recognition of the importance on the human and institutional capabilities on environmental and forestry issues in AMS, AKECOP provide regular training course, workshops and scholarship program for young generations. AKECOP collaboration was clearly demonstrated in four areas: project management, research and development, information exchange and technology transfer, and human resource development during the last 15 years. The strategic vision calls for AKECOP to allocate more support for the strengthening the capability of all participating AMS to more effectively respond to local and national manpower needs in forest restoration. AKECOP is envisaged to evolve and adopt strategies responsive to the changing needs and challenges required for the maintenance of a healthy and sustainably managed forest ecosystem also envisioned in the new Sustainable Development Goals (SDGs).

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Backgrounds

Tropical forests comprise 50% of the world's total forestlands, and ASEAN region occupies the vast area of the tropical forests where some of the biodiversity hotspots in the world are located with abundant natural resources (Figure 1). It is well known that ASEAN region has approximately 80% of global biodiversity and forests providing the natural habitat for up to 40% of all species on earth (Lee, 2007).

Environmental challenges such as climate

change, forest degradation, desertification, forest fire, biodiversity loss and other issues are mainly happen as a result of human-induced activities including commercial and illegal logging, conversion to agricultural land, demand for fuelwood and fodder. Adding to these problems are the socio-political issues in each country in the region, not to mention the cross-sectoral issues on poverty alleviation, food security, corruption and illegal activities. Despite these adverse situations,



Figure 1. Map of ASEAN Member States (Source: Abstracted from the article, “Ambitions for harmony-Southeast Asia- Phil Taylor”: dated on Tuesday 30 July 2013 at International Bar Association)

ASEAN region has yet to formulate sustainable development strategies and action plans.

Recognition on the importance of sustainability is therefore the cornerstone towards recovery and improvement for a greener ASEAN to meet future challenges. This common perspective stems from the urges of local, regional and international communities to pursue sustainable development that complements environmental concerns including forest degradation, biodiversity loss, climate change and poverty.

ASEAN-Korea Environmental Cooperation Project (AKECOP) was launched in response to the call for restoration of vast degraded forestlands and conservation of biological diversity in the ASEAN region. AKECOP is envisioned to contribute to the sustainable and equitable forest management and rehabilitation of deforested areas in the tropical forest ecosystems of ASEAN Member States (AMS) through collaborative partnership in research, capacity building and knowledge sharing.

AKECOP commenced in July 2000. It was established with deliberate commitments and integrated strategies that mobilize targeted stakeholders to take bold actions in pursuit of

environmental protection, management and conservation via forestry. The ultimate goal of this project is to enhance the capacity of AMS in managing their terrestrial and mangrove ecosystems and improvement of local livelihood.

Appreciating the need for human resource development, AKECOP offers opportunities in education and training through post-graduate scholarships, short-term trainings and workshops. These programs further promote the transfer of knowledge and dissemination of information to relevant stakeholders including policy-makers, scientists, academics, and community groups within the region as well as between the region and the Republic of Korea (ROK).

Through 15 years of collaborative partnership, AKECOP has thus emerged as an indispensable platform for cooperation not only among governments but also academics, non-governmental organizations, private sectors and local communities among others.

Progress of AKECOP

At the beginning stage of Phase I (from 2000 to 2005), there were 6 countries including Cambodia,

Table 1. List of participating universities, research institutes, and government agencies in AMS.

| Country | Participating Institutions |
|-------------------|---|
| Brunei Darussalam | University of Brunei Darussalam |
| Cambodia | Forestry Administration Ministry of Environment |
| Indonesia | Faculty of Forestry, Bogor Agricultural University |
| Lao PDR | Department of Forest Resources Management Ministry of Nature Resources and Environment National Agriculture and Forestry Research Institute Ministry of Agriculture and Forestry |
| Malaysia | Forest Research Institute of Malaysia |
| Myanmar | Forest Research Institute |
| Philippines | College of Forestry and Natural Resources (CFNR), University of the Philippines at Los Baños (UPLB) |
| Singapore | National Parks Boards |
| Thailand | Faculty of Forestry, Kasetsart University |
| Vietnam | Vietnamese Academy of Forest Science |

Lao PDR, Indonesia, Malaysia, Philippines and Vietnam, and then joined Thailand and Myanmar in 2002 and 2003, respectively. During the Phase I, AKECOP aimed 1) to share the ROK's practical knowledge and experiences on how to deal with environmental problems in each AMS, 2) to establish partnership between the ROK and AMS in researches particularly on biodiversity, sustainable forest management, and agroforestry, and 3) to develop and implement technologies for restoration of degraded forest ecosystem and sustainable forest management in selected area.

To consolidate and strengthen the collaborative research mechanism dealing with regional and global concerns, Phase II (from 2005 to 2008) more focused on enhancing human and institutional capacity on sustainable forest management, carbon sequestration, watershed management, and related policy formulation; enrich biodiversity and restore forest ecosystems; and alleviate poverty of communities in forest leading to food security. As the needs and issues to be addressed overtime, the objectives of AKECOP in Phase III (2008–2011) have been reviewed to encompass the following: enhance the capacity of AMS, institutions and humans in managing existing and emerging issues on sustainable terrestrial and mangrove forest ecosystems; produce high impact knowledge, information and technology, and generate lessons that could improve sustainable policy, extension and practices; enrich biodiversity and restore forest ecosystems; and alleviate poverty in forest communities leading to food security.

In pursuit of these objectives, AKECOP focuses on three main strategies:

① conduct of research to better understand the various processes and functions within the

diversified forest ecosystems in the region;

② provision of opportunities for advanced education and training to strengthen efforts in capacity building;

③ facilitation of information exchange to encourage active interactions and availability of knowledge and lessons learned.

With 15 years of collaboration, AKECOP has produced numerous outputs in research findings, publications, competitive personnel and post-graduates besides supporting decision-making and improving livelihoods of forest-dependent communities as a result of active participation of participating universities, institutions and governments (Table 1).

Major Achievements

Regional Research Program in AMS.

Over the past one and a half decade, AKECOP researches have been responsive to the pressing and evolving issues of tropical deforestation and ecosystem degradation in Southeast Asian region. The unabated deforestation and biodiversity loss had been the AKECOP's impetus for hosting collaborative researches on forest restoration with partner universities and research institutions in the region (Table 2). An upscale on the research focus was also noted upon the recognition of the detrimental impacts of natural disasters, driven by poor ecosystem health and anthropogenic pressures on natural resources use. The aftermath of Indian Ocean Tsunami disaster in 2004 underscored the need to veer research directions towards restoration of mangrove forests. Co-benefits of doing forest restoration such as biodiversity, forest income and livelihoods have

also been included in the present research agenda, in pursuance of sustainable forest management.

In Cambodia, assisted natural regeneration (ANR) techniques for *D. cochinchinensis*, a potential reforestation species, were sought. Capacity building of forestry practitioners on ANR techniques was underscored necessary to achieve long-lasting success in forest restoration.

Active local participation is the key to effective and sustainable restoration. This is the key message of the AKECOP-Indonesia's researches. The establishment of Gunung Walat Educational Forest (GWEF) as learning site for forestry practitioners has helped showcased various agroforestry systems and small-scale forestry approaches to forest restoration.

Restoration for sustainable agroforestry, biomass energy and carbon sequestration of Teak plantation was the main focus of AKECOP-Lao PDR. Further, restoration technologies such as the ex-situ conservation of endangered species were sought to provide more effective solution to forest degradation problem.

Rehabilitating degraded mined-over ecosystems was the focus of restoration researches in Malaysia. Results of the studies proposed that the adoption of big-hole planting using selected timber-oriented species, with soil amendments, provides greater success in reverting ex-tin mined areas to its original verdant forest cover. In addition, studies on heavy metal concentration in crops grown in mined-over lands was also conducted to caution farmers of the health danger of doing agriculture on contaminated mined-over sites.

Restoration can be best pursued by planting suitable species that will maintain healthy biodiversity and providing ample timber and food for the local communities. This was the key message of AKECOP-Myanmar researches. Their studies recommended some techniques in doing special trial planting and enrichment in Bago Yoma Range. Furthermore, biomass energy and short rotation forest plantations were underscored necessary for effective restoration since the local people are highly dependent on fuelwood and wood.

Multi-disciplinary researches coherent with sustainable forest management framework are critical to effective restoration. AKECOP-Philippines understood this principle very well, hence diverse studies on restoration technologies in view of their biophysical, social, and economic implications were explored. Some of the potential approaches to arrest deforestation and forest degradation in the Philippines include: 1) nurse-tree climax species strategy which adheres to ecological succession principle; 2) impacts of ANR to survival of reforestation species; 3) selecting the tree species for watershed rehabilitation using the optimum water-use efficiency index; 4) monitoring of restoration sites using GIS technologies; and 5) economic valuation of agroforestry benefits.

AKECOP researches in Thailand delved on the role of nurse crops in restoring degraded grasslands. Climax species such as dipterocarps are best grown under the shade of nurse crops such as the *Acacia mangium*. As local communities

Table 2. Key words of regional research activities in each AMS.

| Country | Participating period | Key words |
|-------------------|----------------------|--|
| Brunei Darussalam | 2014~2016 | Restoration, peat swamp forest |
| Cambodia | 2001~2005, 2010~2016 | Restoration, <i>Dalbergia cochinchinensis</i> |
| Indonesia | 2000~2016 | Restoration, Agroforestry, Biomass energy, Carbon sequestration |
| Lao PDR | 2001~2005, 2008~2016 | Restoration, Biomass, <i>Tectona grandis</i> , Biodiversity conservation |
| Malaysia | 2001~2016 | Restoration, Ex-mining, Phytoremediation |
| Myanmar | 2003~2005, 2011~2016 | Restoration, Plant diversity, Wood biomass energy, Medicinal garden |
| Philippines | 2000~2016 | Restoration, Biodiversity, Mangrove, Policy analysis |
| Singapore | 2014~2016 | Biodiversity Conservation |
| Thailand | 2002~2016 | Restoration, Model forest, Agroforestry, Mangrove |
| Vietnam | 2001~2005, 2009~2016 | Restoration, Mangrove, Payment Forest Ecosystem Services (PFES) |

witnessed the effectiveness of establishing nurse crops, many of them have started adopting this method.

Continuous monitoring of rehabilitation sites is critical to ensure the success of forest restoration. This was the main message of AKECOP-Vietnam, which conducted updating and analysis of restoration data in the Northern Mountains of Vietnam. Further, livelihood and income potentials of payments for environmental services (PES) projects in Hoa Binh hydropower site was explored as an approach to sustain restoration and conservation efforts over degraded watersheds.

On-site Research Program.

AKECOP provides opportunities for Korean scientists and students to participate in an on-site ecological, environmental and conservation researches in the different AMS. This is an opportune venue for mutual learning process between local and foreign researchers. In the Philippines, for example, the on-site researches encourage resource sharing, such that foreign counterparts are given access to conduct researches in Mt. Makiling Forest Reserve (MFR) and use the laboratories of the University of the Philippines Los Baños. Table 3 summarizes the on-site research collaborations under the AKECOP-Philippines.

Human Resources Development.

The increasing number of problems and issues on biophysical, socio-economic, and political aspects in the ASEAN region result to a negative impact on the management of its tropical forest ecosystems. Recognizing the role of researchers and policy makers in the sustainability of forest resources in the tropics, AKECOP aims to make the resources of the ROK and SNU in particular, for educating and training researchers and students from the AMS to upgrade their capacities in undertaking researches on key environmental problems such as soil and water pollution, waste management,

soil, forest, and watershed management. This also provides strong environmental partnership and collaboration among AMS for the sustainable and equitable management of forests, rehabilitation of deforested forest ecosystems in the tropics, and the conservation of biodiversity.

To achieve this aim, capacity building through short-term trainings and scholarship programs has been organized. These efforts are recognized as important approaches to empower local institutions and individuals as effective stewards of ASEAN region's forest resources.

AKECOP sees the need to strengthen the capacity of junior researchers in terms of principles and practices of forest research, experimental design and analysis, and advanced techniques that would increase the comparability of research methods and results in tropical ecosystems. Thus, short-term trainings on fundamentals of forestry field research, and management of research and development project for sustainable management were held in Malaysia, Thailand, and Philippines, and participated by AKECOP members. This is in the hope of strengthening forest research and management for each member country. Training initiatives for local communities and forest managers were also conducted in some AKECOP-member countries (Table 4).

With the increase of consideration of environmental management in AMS region, AKECOP provide opportunity for young researchers to enhance the capacity on soil and water analysis, air analysis, and DNA analysis through the National Instrumentation Center for Environmental Management (NICEM) called as "NICEM Education & Training Program". During the training program, trainees learnt advanced skills and technology step by step (e.g. soil sampling on the field site, organic, inorganic, chemical analysis, and result analysis) with the experts using the high technology equipped in NICEM.

Table 3. List of on-site field researches conducted in the Philippines.

| Year | On-site Research Title | Participating Institutions |
|-----------|---|----------------------------|
| 2001~2008 | Restoration of degraded forest and development of agroforestry techniques by local people's participation | MoE ¹⁾ |
| 2003~2005 | Biodiversity and genetics resources of plant species in tropical forests | MoE |
| 2005~2011 | Conservation of plant biodiversity in tropical forests | MoE |
| 2008~2011 | Ecological restoration research in the Philippines | UOS ²⁾ |

¹⁾ Ministry of Environment, ROK, ²⁾ University of Seoul

Table 4. List of short-term training course and its title and venue.

| Date | Title | Venue |
|----------|---|-------------------|
| May 2001 | Restoration of Degraded Forest Ecosystem and Environmental Management | Korea |
| Feb 2002 | ASEAN-Korea Environmental Cooperation Project Regional Research | Philippines |
| Jan 2003 | Fundamentals of Forestry Field Research for AKECOP Regional Research Staff | Malaysia |
| Jan 2003 | Fundamentals of Forestry Field Research | Korea |
| Jan 2004 | Biodiversity Conservation in the Forest Ecosystem | Philippines |
| May 2004 | Soil Testing and Plant Analysis in Degraded Forest Ecosystem | Korea |
| Jan 2005 | Management of Research and Development Project for Sustainable Forest | Thailand |
| Feb 2006 | Soil and Plant Analysis; Modern Instrumental Techniques | Korea |
| Feb 2007 | Rehabilitation and Sustainable Uses of Mangrove Forest Ecosystems | Thailand |
| Feb 2008 | Forest Resource Valuation with Emphasis on Mangrove Ecosystems | Philippines |
| Mar 2009 | Quantification of Carbon Sequestration Capacity of Tree Species | Malaysia |
| Jan 2009 | Community Forestry For Middle Management Staff | Philippines |
| May 2011 | Measurement of Carbon and Plant Genetic Biodiversity | Korea |
| May 2012 | Forest Restoration Strategies in the Context of REDD+ | Thailand |
| Sep 2012 | Research planning and Implementation on Biodiversity Conservation for Ecosystem Restoration | Korea |
| Apr 2014 | Tropical Ecosystem Resilience and Service | Brunei Darussalam |
| Jun 2015 | Conservation of Endemic Plants and Ecotourism for Enhancing Local Livelihood | Korea |
| Feb 2016 | Integrated Assessment of Ecosystem Services in Protected Area | Philippines |

In addition, a number of young scientists were also granted scholarships for graduate programs at SNU and UOS in Korea. The AKECOP scholars are 21 students (16 MSc students and 5 PhD students, Table 5) and it is composed of researchers from Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Thailand, and Vietnam (Figure 2). Thesis from these scholarship programs and grants were AKECOP member country-based that advance scientific knowledge about their country's forests and, at the same time, aid in decision-making for a better forest management for each country through understanding different forest entities and aspects. The theses are encompassed ecological, physical, and social aspects of forestry. Outputs of these researches were published to science journals and AKECOP literatures available to the public. Most, if not all, of these researches have also been presented to various international and local science conferences.

Workshops and Conferences.

Apart from short-term trainings, AKECOP member countries had also organized and participated in a series of workshops. These workshops include the planning of future project researches and collaborations for the effective implementation of research activities, where the

role of research and collaborations – regional and global, had been emphasized. Among these workshops is the ASEAN-Korea Environmental Cooperation Project Planning Workshop held at UPLB in 2001, which serves as the venue to identify the research needs of every AKECOP member country. Another one is the International Workshop on “Restoration of Degraded Forest Ecosystem in Southeast Asia” held in Chiangmai, Thailand in 2003, which focuses on the role of agroforestry restoration. Annual workshops were conducted to present and discuss researches as well as serve as venue for sharing of technical information, knowledge and experiences, which greatly contributed to the effective and efficient implementation of research activities.

Since 2013, AKECOP developed the CLMV workshop, which aims to strengthening the capability of young researchers by providing opportunity to learn and share the information and knowledge, and to enhancing institutional capability by organizing international workshop in Cambodia, Lao PDR, Myanmar, and Vietnam. This workshop also purposed to support “Initiative for ASEAN Integration (IAI)” which is declared by ASEAN to develop all together by reducing development gap among AMS (Table 6).

Table 5. Number of students of scholarship program.

| Year | 2003 | 2004 | 2006 | 2008 | 2009 | 2011 | 2014 | 2015 | 2016 |
|----------------|-------|-------|----------------|----------------|-------|-------|-------|-------|-------|
| No of Students | MSc 1 | PhD 1 | MSc 4 PhD 1 | MSc 4 PhD 2 | PhD 1 | MSc 1 | MSc 1 | MSc 1 | MSc 1 |

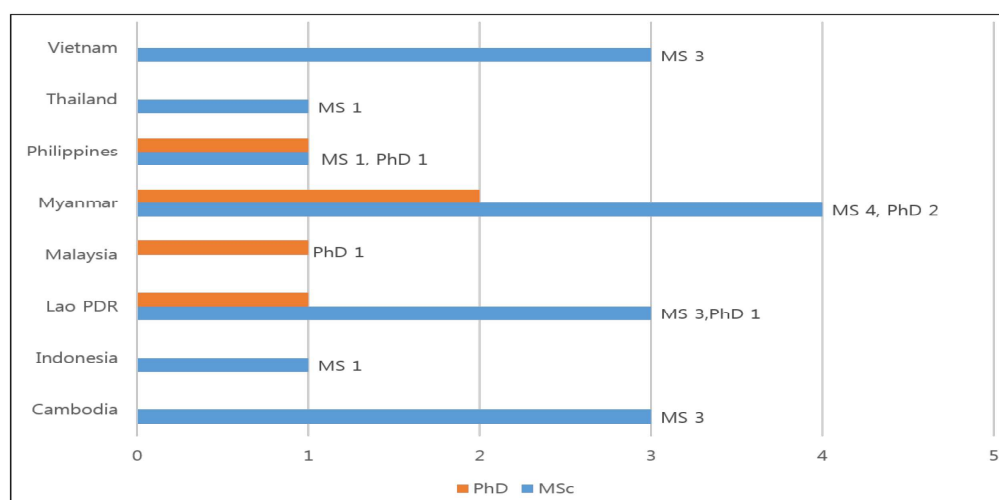


Figure 2. Country distribution of the students of scholarship program.

Lessons Learned

AKECOP was started with the initial aim of developing and sharing technologies between Korea and AMS in the area of restoration of degraded forest ecosystems and sustainable forest management. Collaborative partnership between Korea and AMS as well as among AMS were demonstrated or implemented through researches, educational trainings, workshops, and information sharing. This collaborative relationship has been established for over 15 years among key sectors especially academic and research institutions, non-governmental organizations, private sectors and local communities. The collaborative approach generally fostered closer relationship and synergy among participating people and institutions thus contributing to AKECOP's overall success.

Under the AKECOP collaborative umbrella, numerous scientists from Korea and participating AMS were afforded unique opportunity to pursue a common goal of successful forest restoration and sustainable forest management in the ASEAN region. Through this synergic relationship, AKECOP could achieve greater research and educational results or impacts relative to its goals and objectives.

AKECOP collaboration were clearly seen or

demonstrated in four areas: project management, research and development, information exchange and technology transfer and human resource development.

AKECOP generally employed or adopted participatory project management approach in almost all its activities, especially during the earlier phases of the project. Joint planning among all participating countries was conducted regularly. In-house joint assessment of research projects was also conducted during phase I with good results. In the later stages of the AKECOP project management, however, this important project management tool was laid aside. Two lessons can be drawn from these participatory planning activities:

① Participatory planning ensures the relevance and maximum results or impact of research, training and other AKECOP undertakings

② In-house joint research assessment is an effective mechanism for ensuring the quality and reliability of regional researches. Considering the importance of ensuring quality and reliability of all regional researches, AKECOP should consider re-instituting this indispensable research quality control mechanism.

Several modes of regional collaboration

Table 6. List of CLMV workshops.

| Year | Title | Country |
|------|--|----------|
| 2013 | Sustainable forestry and biodiversity management and forest rehabilitation | Lao PDR |
| 2014 | Forest landscape restoration | Cambodia |
| 2015 | Payment for forest environmental services and biodiversity conservation | Vietnam |
| 2016 | Enhancing ecosystem services through forest landscape restoration | Myanmar |

were employed in this domain namely country research collaboration, regional cross-cultural thematic research partnership. Research twinning arrangement (through technology sharing group (TSG)) and on-site bilateral field research partnership. Cross-cultural thematic research partnership involves tripartite (three countries) and twinning (2 countries) arrangements.

① Species selection is a key to the success of forest restoration

② Local people participation enhances the success of forest restoration and SFM

③ Income and livelihood generating technology for local forest dependent people such as agroforestry could also be an effective vehicle for forest protection

④ Forests are powerful carbon sinks

⑤ Capacity building and institutional strengthening are basic to SFM

To maximize learning this innovative cross-cultural research collaboration on mangroves, follow-up joint research assessment and research results sharing workshops among researchers involved must be conducted.

An innovative communication and extension strategy involving cross-country field visits of model forest restoration projects was adopted under this domain during Phase III. This collaborative information exchange undertaking involving the Philippines, Thailand and Vietnam provided opportunity for participating researchers to visit, observe and mutually learn from exemplary forest restoration projects in their respective countries. The main rationale is that if these learnings are shared or transferred to fellow researchers or professionals they could help improve the status of forest restoration in their respective countries. Based on reports of participating researchers, cross-country visits were found to be an effective medium for information exchange and possible technology transfer in forest restoration thus the use of this extension strategy should be maximized.

Collaboration in this domain is aimed at

insuring adequate supply of quality expertise/ manpower in forest restoration and sustainable forest management. AKECOP employs two methods of insuring an adequate supply of quality human resources for research and teaching or capacity building in forest restoration and SFM: non-formal education in the form of short training courses delivered by capable participating countries and by NICEM, SNU and formal education through graduate studies thesis support and scholarship grants for masters and PhD students.

① That participating AMS with training capabilities can deliver relevant cost-effective and cost-efficient AKECOP training programs primarily due to lower food and accommodation cost experts' incentives or honorarium and other training logistics.

② That short term training at NICEM, SNU provides good opportunity to young researches to be exposed to new scientific methods, technologies and equipment for basic forest restoration research. The importance of NICEM trainings has been generally recognized. For NICEM to be most effective however it has been suggested that that training programs should be more tailored to the felt needs of participating countries. This implies that need assessment of prospective trainees be conducted first before training programs are designed and implemented.

③ That formal education provides a good opportunity for rigorous training or production of high quality research and teaching expertise/ manpower in forest restoration and sustainable management. Recipients of graduate thesis support were graduate students from UPLB, Philippines, KU, Thailand and IPB, Indonesia.

AKECOP has shown that creative collaboration in research and institutional development in the ASEAN region is possible, but very challenging. If these challenges are overcome it can be an effective strategy for successful R & D, and institutional development in forest restoration and other areas of sustainable forest management.

Way Forwards

Nurtured from the seed idea of a research and educational project proposed by the ROK, AKECOP is now strongly anchored in roots of regional integrity, branching with collaborative networks and bearing fruits of sustainability. With new research findings and better understanding on both terrestrial and coastal forest ecosystems, AKECOP is supporting policy-makers with scientifically sound recommendations while improving livelihoods of people, particularly forest-dependent communities.

Pioneered by senior professors, researchers and decision-makers from the AMS, and guided by prominent AKECOP Steering Committee members. AKECOP has led the way for a meaningful and sustainable collaboration in research and education particularly in forest ecosystems restoration and environmental conservation in the ASEAN region during the course of its more than a decade of existence.

Considering its great achievements during the past 15 years, participating AMS generally have a consensus that AKECOP should continue as a platform for pursuing regional collaborative efforts in forest restoration and environmental conservation between Korea and the ASEAN. Over the years AKECOP through its collaborating institutions has conducted many research and training activities that have generated significant information and knowledge and experiences in tropical forest restoration and conservation. With this wealth of knowledge and experiences and the synergy and goodwill developed through more than a decade of collaboration among participating AMS, the AKECOP network is poised to become a regional or even an international hub for information and technical (consultancy) services for tropical forest ecosystems restoration research and human capacity building.

In the future, AKECOP programs will continue to play an instrumental role in providing the scientific basis for resolving current and future issues and challenges in forest restoration and sustainable forest management. However, to maximize the impact of its future research and development activities, AKECOP should support the transformation of the research and demonstration sites established in the past. In addition to transform the R & D sites into collaborative learning centers for forest

restoration, AKECOP should also focus collaborative linkages with development agencies and other relevant stakeholders to facilitate the diffusion and transfer of relevant research outputs and innovative practices in forest restoration, agroforestry and forest livelihood creation found to be useful and feasible.

To strengthen its future capacity for human resource development, AKECOP should also build upon its past achievements in the area of non-formal training and formal education. By so doing AKECOP should adopt a new strategic vision for human resource development where participating AMS will be given more opportunity to participate in the human capacity building process no longer just as beneficiaries or receivers but also as providers of training programs. Through this vision of a more democratized and participatory training program delivery, the multiplier benefits of non-formal and formal education in terms greater production of high level competencies in forest ecosystems restoration are maximized.

The strategic vision calls for AKECOP to allocate more support for the strengthening the capability of all participating AMS not only through staff development, but also through curriculum development and change. This would enable participating AMS to more effectively respond to local and national manpower needs in forest restoration in the face of new forestry development challenges.

In 2009 the ASEAN adopted a vision of "Green ASEAN" reflecting an environmentally clean and green. Community, as it embarks into its journey towards regional economic integration. Along this journey towards ASEAN integration, and in pursuit for a Green ASEAN, AKECOP is envisaged to evolve and adopt strategies responsive to the changing needs and challenges required for the maintenance of a healthy and sustainably managed forest ecosystem, which are also envisioned in the new Sustainable Development Goals.

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