

philippine studies

Ateneo de Manila University • Loyola Heights, Quezon City • 1108 Philippines

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Philippine Studies vol. 51, no. 3 (2003): 474–500

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Fri June 27 13:30:20 2008

Fifteen Years of Interdisciplinary Research and Education through Filipino-Dutch University Cooperation: The Cagayan Valley Program on Environment and Development (CVPED)

Denyse J. Snelder and Andres B. Masipiqueña

Globalization has contributed to an enormous increase in international university cooperation. This paper discusses one example of a long-term bilateral agreement (without large-scale external funding) between a Dutch and a Philippine university. Although unequals in many aspects, the two universities have effectively defined their roles and contributions. After more than a decade of existence, the partnership has generated mutual benefits and strengthened regional efforts at environmental resource conservation. Grants from international donors to finance projects are among its spillover effects. But the partnership has also generated conflicts and tensions. This paper addresses various aspects of the partnership's sustainability based on the authors' personal experiences.

KEYWORDS: *internationalization, higher education, environmental sciences, sustainable development, human resource development*

International cooperation has come to be a crucial requirement of large new research projects funded by donor agencies. At the same time, recruitment of foreign students is a policy aim of many universities in their struggle for survival and recognition. This process of internationalization leads to various kinds of cooperation among universities of different countries.

Several forms of cooperation between universities of western and developing countries can be distinguished. The first kind is cooperation aimed at the improvement of research and educational facilities of

institutions in the recipient countries. Funding for such projects is provided by bilateral or multilateral donor agencies, while staff members of university institutions from the West act as consultants and implementers. Relevant research components are integrated into these projects, making them beneficial to the host institutions. Donor agencies, however, make sure that the development aim of the projects is not sacrificed for the sake of the academic interests of the host institutions. The projects consist of teaching and training components, exchange of students and staff, fellowship programs, human resource development, curriculum development, and physical infrastructure (buildings, cars, laboratory and library facilities). They are usually characterized by relatively large budgets and require involvement not only of academic but also of technical staff and university administrators. Because of the attractive financial benefits, there is often a strong political component attached to these projects, reflected, for example, in the choice of favored universities. Moreover, the fact that three or more parties are involved—at least one donor agency and two universities—gives rise to potential friction because of diverging interests and evaluation criteria (Wächter 1999).

The second kind of cooperation can be characterized as a strategic alliance between universities for specific projects. Such projects are often initiated and largely funded by Western universities or research institutions. Local universities in developing countries are used as a kind of stepping-stone in order to obtain the facilities, visas, and logistic support within the country needed by Western researchers. Many of these projects are short-lived, rarely extending over more than three to five years. They have little lasting effect on the host institution, with the exception of a small number of individual researchers who may be involved in the project as staff, research assistants, or recipients of fellowships. The tendency to establish this kind of cooperation with the best universities in the country also leads to a kind of competition among foreign universities for the favors of a limited number of institutions and individual academics in the host country. Because of this situation, institutions and individuals in developing countries often skillfully make use of the opportunities offered, but lack long-term commitment to the projects and lose interest as soon as the benefits of the cooperation start to decrease.

The third kind of cooperation is based on bilateral agreements between universities but without large-scale external funding. This is based on partnership and mutual benefits, but has only limited resources at its disposal. In most cases, such projects have a long-term perspective and involve a small number of committed people on both sides. Because of their nature, such relationships are not established with top universities and institutions in the country, the ones that are involved in the other types of cooperation projects. These projects usually escape political attention and external evaluation by donor agencies, but this is not to say that they lack long-term benefits or that they are inefficient in terms of financial and human investment or societal impact.

In the present wave of internationalization of both research and tertiary education, it is worthwhile to take a closer look at these three types of cooperation. At the same time, donor agencies are adopting a more critical view of the nature and sustainability of cooperation projects. In recent years, a number of evaluations have reviewed the problems of the first kind of projects in particular (Wächter 1999; Maselli and Sottas 1996; Boeren 2000; Boeren et al. 2000).

Boeren (2000) provides a useful analytical scheme for assessing the sustainability of inter-university cooperation programs. But sustainability is not easily defined. Possible definitions, like "maintaining the program's results after termination of the external intervention," or "the maintenance, development and building on achieved results and enhanced competence," are found to lack precision in terms of measurability. Moreover, they do not distinguish between levels and types of sustainability. Boeren proposes to differentiate between the academic, financial, and technical aspects of sustainability and to assess these aspects at three different levels, that is, at the project, institution, and cooperation levels. The two sets of distinction can be linked. This results in a total of nine types of end-results of sustainable inter-institutional cooperation, which are defined in measurable terms.

In this article, we present an example of the third kind of cooperation, the Cagayan Valley Program on Environment and Development (CVPED). It is a relatively small but long-lasting project between two institutions—a Dutch and a Philippine university. It is based on the authors' own intimate experiences and long-term involvement with this

project. Hence, the following discussion is not an external evaluation but a description of the practical application of an interdisciplinary research and education program in the context of international university cooperation in the field of environmental science. In discussing the various aspects of the program, the authors bear in mind Boeren's aspects of sustainability of inter-institutional cooperation (see table below).

The sustainability matrix for CVPED: Aims, constraints, and achievements

Aspects of Sustainability	Project level	Institution Level	Cooperation Level
<i>Academic</i>			
Aim	To institutionalize project activities	To have a well-organized and managed staff that efficiently performs its mission	To enable the partners to establish a true partnership with mutual benefits
Constraints	Discourse on values in environmental and development planning	Brain drain, decrease in number of forestry students, government-directed research agenda	Different education and research traditions, university criteria, cultural differences
Achievements	Network and involvement of local stakeholders and government institutions in projects and steering committee, planning and design of development and conservation projects (EIC, NSMNP-CP, COMFREP, CROC), field supervision and assistance to students	Bilateral management structure, Dutch and Filipino coordinator and Filipino administrative staff assigned to run the program, staff and curricula development	Student projects, postgraduate and staff research, student reports, dissertations and scientific publications, triannual conferences, staff training and development, incorporation of environmental science in forestry curricula, staff and information exchange
<i>Technical</i>			
Aim	To ensure proper use and maintenance of project hardware/	To develop an institutional setup that guarantees the proper	To ensure that partners maintain the technical infrastruc-

table continued next page

	software and field equipment	use and maintenance of infrastructure and equipment	ure needed for their academic partnership
Constraints	Regular breakdown of equipment, typhoon and fire damage	Lack of telecommunication systems, fluctuations in electricity supply, regular blackouts, typhoon and fire damage	
Achievements	Installation and maintenance of hardware/software, equipment for soil and water laboratory, field equipment, cars, and bikes; contributions to the Environmental Information Center	Maintenance and management of infrastructure by Isabela State University, including the Environmental Information Center, satellite telecommunication system, and soil and water laboratory	Housing and office facilities provided by Isabela State University: program office, guesthouse, student house; clear agreement on the control of resources
<i>Financial</i>			
Aim	To secure recurrent costs	To have a sound financial basis	To have partners invest in the partnership
Constraints	Limited integration of project activities into the financial structure and system of the Philippine institution	Absence of a system for regulating Filipino staff-time allocations and revenue sharing of income-generating activities; limited financial basis	
Achievements	Facilitation of student research, project activities linked to the concerns and needs of external stakeholders and brought to the attention of decision makers within and outside the partner institutions, coordination of donor projects and inputs	Center of Excellence funding through the Commission on Higher Education, use of laboratory for income-generating activities	Joint applications for external project and research funding, assistance in Dutch and Filipino fellowship applications, funding from Leiden University for the maintenance and operation of the field station

CVPED as a Cooperation Program

The field of environment and development offers a wide-ranging scope for international academic cooperation. These two catchwords of the late 1980s were the focus of the initiative that gave birth to the Cagayan Valley Program on Environment and Development (CVPED) in 1989, located at Isabela State University (ISU) in the Cagayan Valley region in northeast Luzon, Philippines. It is a joint program of the Institute of Environmental Sciences (CML) of Leiden University, the Netherlands, with the College of Forestry and Environmental Management (CFEM), Isabela State University in Cabagan, Isabela Province, Philippines, as the host institution.

The timing of the initiative was no coincidence. Interest in the Philippines rapidly expanded in the Netherlands after the fall of Ferdinand Marcos in 1986 and could be ascribed largely to the wave of democratization under the administration of President Corazon Aquino. Leiden University made funds available for international cooperation. Based on a theoretical exercise in setting the criteria for a potentially fruitful cooperation and a fact-finding mission in the area, negotiations were opened with Isabela State University. These criteria assessed the environmental and developmental problems in the area, and the suitability of the university for the proposed research and educational cooperation. Northeast Luzon turned out to be an interesting study area in terms of environmental problems, with varied land use patterns and a highly diverse ethnic population (see appendix for a short description of the region). The ISU seemed more than willing to embark on the kind of cooperation linkage that the representatives of Leiden University had in mind. Extensive negotiations finally led to a formal agreement between the two universities, signed in June 1989. The agreement specified the objectives of the program as follows:

- To strengthen the research and educational components of Leiden University and especially of the Institute of Environmental Sciences;
- To strengthen the research, education, and extension activities of the ISU and especially of the College of Forestry;

- To contribute to the institutional build-up of the ISU College of Forestry; and
- To stimulate and work for the implementation of projects with direct practical relevance to the sustainable development of the Cagayan River Basin and adjacent areas, and to safeguarding the region's natural heritage.

It is crucial to point out here that the cooperation agreement is based on mutual benefits, and does not stipulate a termination date. It is meant to last as long as both parties wish to continue it. Both institutions defined their own contributions to the program in terms of money, facilities, and human power, and a structure was designed to manage these contributions. This structure is based on equal partnership and respect for the characteristics and rules of the partner institutions. The program not only opened the doors to cooperation but also provided a blueprint and foundation for the future research agenda of the collaboration and of the human development program. It coincided with the return of a number of ISU faculty members from graduate studies at institutions in Los Baños or Manila.

Yearly plans of operations are drawn up through regular consultations, and budget allocations are made according to these plans. Leiden University has contributed a yearly budget of about Euro 27,500.00, and one permanent staff member stationed in the Philippines. The contribution of Isabela State University has been to assign a full-time coordinator appointed from the ISU staff, and to provide office and housing facilities, and all kinds of support through all layers of the university system up to the level of the president. This joint input has made it possible to operate a field station the whole year-round, and to assist a substantial number of students at the MSc level. Funds for separate projects are acquired through the joint efforts of both parties.

Over the years, the Dutch contribution to the project budget from Leiden University funds has been maintained at a stable level. However, taking into account exchange rates, the buying power of this sum of money has fluctuated substantially as a result of the booming Philippine economy in the early 1990s, followed by the economic, financial, and political crisis in recent years.

The College of Forestry and Environmental Management (Isabela State University)

The Isabela State University is one of more than a hundred state colleges and universities in the Philippines. Located in Isabela Province, northeast Luzon, it has seven campuses spread all over the province. Each campus offers specialized courses, although courses are not exclusive to a single campus. Historically, these campuses belonged to different institutions, but were integrated into a provincial university in 1978. The center of the university is in Echague, even though this is not the capital of the province. It is considered as the biggest of all the campuses in terms of faculty members, services, and courses offered.

The College of Forestry and Environmental Management (CFEM), which hosts CVPED, had a modest beginning in 1968 as a School of Forestry, converting later to the College of Forestry, until its name was changed to College of Forestry and Environmental Management in 1993, after four years of cooperation with CML. Since 1978, it has been considered as an example of distinctive competence at Isabela State University because it attained a prominent place in the educational landscape of the Cagayan Valley region. In 2000, the Commission on Higher Education (CHED) promoted the college as a Center of Excellence.

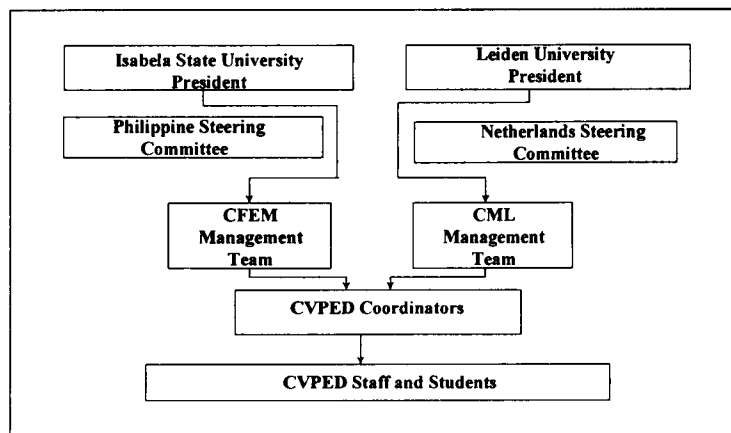
The Institute of Environmental Sciences (Leiden University)

The Institute of Environmental Sciences, founded in 1978, is an interdisciplinary institute of Leiden University. Its main aim is research and education on the causes of and solutions to environmental problems. Staff members are from various academic disciplines, like chemistry, economics, anthropology, and biology, and are connected to one of the three departments. The Department of Environment and Development has its focus on developing countries, with main activities in the field of rural environmental constraints, including protection and rehabilitation of soils, wildlife, and other natural resources. The department places a strong emphasis on the management of natural resources, involving local people, government institutions, and other organizations. In addition to the educational and research work done at Leiden, there are special links with two universities abroad, one in Cameroon and

another in the Philippines. Additional work is done in other countries, like Indonesia and Vietnam. Research in these areas is meant to contribute to solving local “environmental and developmental” problems, but it is also geared toward the development of environmental theory and research methodology in general.

Cooperation in Action

A Dutch and a Filipino coordinator who jointly decide on all matters regarding student research, allocation of funds, and use of infrastructure manage CVPED. Both coordinators are supported by a management team composed of staff members of CML and CFEM (see figure below). Once or twice a year, representatives of the two management teams discuss with superiors of both universities the issues of program implementation and the research and educational plans for the near future. The plans are also discussed with a steering committee chaired by the president of Isabela State University and composed of official representatives of institutions in the region that are directly involved in program activities. These include the regional directors of the Department of Environment and Natural Resources (DENR), the National Economic and Development Authority (NEDA), and the Department of Agriculture (DA); some nongovernment organizations (NGOs);



and other institutions. In this way, the program maintains close contacts with relevant actors in the area, which then offer opportunities to discuss research outcomes with the relevant government agencies.

Interdisciplinary Research and Education Program

With the active role of CVPED in helping CFEM expand its mandate on environmental education, CFEM gradually embarked on a mission to achieve a constructive role not just in forestry but also in environmental education, research, and extension. Since its formative years, CVPED has been an active partner of CFEM in achieving its goals through, among others, scholarships, joint research, curriculum review, and establishing strategic linkages. The program has worked closely with CFEM in restructuring both its undergraduate and graduate degree programs. Concepts of environmental science have been incorporated into the existing curricula in forestry, whereas associated research has been integrated into teaching activities. In research, CFEM improved the focus of its research efforts by identifying five fields of interest: rehabilitation of degraded grasslands; sustainable management and development of secondary forests; biological conservation and biodiversity; development of integrated protected area strategies; and watershed management and environmental planning and management along the fringes of the northern Sierra Madre.

Clusters of Research Topics

The core of CVPED's activities over the years consists of research done by Dutch and Filipino students. The research agenda is jointly set by the two institutions. The multifaceted aspects of environment and development problems in the region have given rise to a great diversity of research topics investigated over the years. Broadly speaking, these can be divided into three research clusters. The first deals with environmental behavior. It studies the background and effects of interactions between environment and people from an interdisciplinary perspective, paying attention to social, economic, and political aspects. It also studies under what conditions these interactions actually change and under what

conditions land-use transitions are induced. The second line of research is less analytical than the first, is descriptive in nature, and is oriented to design and solution. It aims to contribute to the effective management of natural resources, thereby incorporating values of local and higher levels, such as national or even international interests as these are expressed through international conservation agencies or the GEF (Global Environment Facility, a World Bank-managed program for environmental projects with global relevance). The third line of research is of a biological nature, consisting largely of inventories of plants and animals, studies of population dynamics, and characterization of habitats for biodiversity conservation and management. This line of research is closely related to the management plan for the Northern Sierra Madre Natural Park (NSMNP).

The clusters of research topics include:

1. Non-timber forest products. Over the years, various research projects have been carried out in relation to non-timber forest products, such as rattan, bamboo, and bush meat. The studies focus on methods of resource exploitation, market chains, and contribution to the household economy. An important aspect of all these studies is the sustainability of harvesting methods practiced in the region.
2. Instruments for forest management. The DENR has issued several policy instruments for forest management, varying from logging bans to granting rights to indigenous peoples. Studies are made on the implementation, constraints, and achievements of these instruments, and are conducted at the regional and local levels. Of particular relevance are studies of the use of certificates for ancestral domain claims by the indigenous people in the area.
3. Migration and pioneer settlement. Traditionally, the Sierra Madre was inhabited only by the Agta, the Negrito hunters and gatherers. Because of population pressure elsewhere in the Philippines, it has become an important destination for migrants from other parts of the country. Studies are conducted on these movements, including the origin of the migrants, the nature of these pioneer settlements, and their effects on forest cover and land use.

4. Land-use transition. Slash-and-burn agriculture has been the dominant form of land use of farmers operating in the wake of logging companies. In recent years, a transition has taken place toward more permanent forms of agriculture. Theoretically, it is very interesting to understand under what conditions this transition occurs. What is the role in this process of market forces, ethnic origin, environmental knowledge and awareness, and perception of future developments and opportunities provided by projects? This process takes place not only in degraded forestlands but also in grasslands (Moonen 1998; Henkemans, Persoon, and Wiersum 2000).
5. Biological inventories, population dynamics, and habitat characterization for biodiversity conservation and park management. In recent years, projects have been carried out in cooperation with the Northern Sierra Madre Natural Park Conservation Project (NSMNP-CP). Biological knowledge of the NSMNP is relatively poor, and a number of key species for biodiversity have been identified for further research. Among the studies undertaken are those of the Philippine crocodile conducted within the framework of the Crocodile Research, Observance and Conservation Project, or CROC (discussed in a later section of this paper; van Weerd 2000), and of bats, butterflies, wild pigs, deer, and freshwater fish (NSMNP-CP 2000a; van Weerd, Rodriguez, and Siggayo 2001). Along the Pacific coast, studies have been conducted on marine wildlife and habitat conditions (van Lavieren 2000) and marine turtle conservation strategies (NSMNP-CP 2000b).

Student Research Projects

Over the years, more than 160 Dutch students have conducted fieldwork in the Philippines, including in and on the outskirts of the Sierra Madre mountains. So far, about sixty Filipino MSc students have been involved in the program. The imbalance in numbers is partly explained by a reduction in the number of available graduate students at CFEM in recent years. Due to the decrease in forest cover in the Philippines, and the subsequent decrease in employment in the forestry sector (government as well as private companies), forestry is no longer a

very attractive study for students. In addition, it has become more difficult to synchronize the time schedules of Dutch and Filipino students. In particular, the full-time availability of Dutch students in contrast to the jobs and other obligations of Filipino MSc students has made it more difficult to put together student research groups. It is a point of concern for the project management and, at the moment, the curriculum at CFEM is being reconsidered.

The Dutch students come not only from Leiden University but also from other universities in the Netherlands, including Amsterdam, Utrecht, Wageningen, Groningen, and Nijmegen. Jointly, they represent a large number of disciplines, ranging from anthropology, law, human geography, public administration, to forestry, biology, and physical geography. Through international exchange programs, in particular the Erasmus program, students from other countries who are studying at Dutch universities have also participated in CVPED's activities. In effect, CVPED has hosted students from Germany, Italy, Belgium, and East European countries.

The student research projects and their respective outcomes are published in a series of reports at the home institutions. They are further integrated into articles in academic journals or books, and presented at international conferences organized by CVPED at Isabela State University. Although the progress made in the research program through individual students is rather small, over the years a substantial amount of information has been gathered. By the long-term presence and the pursuit of research interests, thematically or regionally, much knowledge has been generated.

Postgraduate and Staff-Staff Research

In addition to student research projects, the program has facilitated eleven PhD projects of five Filipino and six Dutch graduate students (e.g., Pasicolan 1996; van den Top 1998; Aquino 2003). The PhD projects are defined as individual projects within the scope of the program. A Filipino PhD fellow retains his or her ISU salary and position but can devote a period of four years to PhD research. The program covers the actual research costs. Funds for Dutch PhD candidates are

usually obtained through the National Research Council in the Netherlands (NWO). A joint Dutch-Filipino committee supervises these projects. Other publications by Filipino and Dutch staff members discuss regional environmental concerns and associated management options, such as the condition and development of grasslands (Snelder 2001a, 2001b), the knowledge and use of fire (Masipiqueña, Persoon, and Snelder 2000), and the management of national parks (Araño and Persoon 1998; Spijkerman, Masipiqueña, and Snelder 2001).

Training, Workshops, and Conferences

Aside from the various research projects, a substantial number of Filipino staff members at ISU have been sent abroad for training and attending conferences and workshops. The program has further organized four international conferences in the region to discuss the research findings of the program itself and to present comparative studies and perspectives on the state of affairs in the region (CVPED 1992; Guzman and de Groot 1995; Bernardo and Snelder 1999; van der Ploeg, Bernardo, and Masipiqueña 2002). The conferences have contributed in various ways to expanding networks within and outside the Philippines, and to establishing collaboration with other research institutions in the region, such as the International Center for Research in Agroforestry (ICRAF), the International Center for Living Aquatic Resources Management (ICLARM), and the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA).

Spin-off of CVPED Initiatives

The direct benefits of this program are primarily for students. For Filipino MSc students, participation in the program turned out to be a fruitful experience. As most of the students had started their working careers already, the additional training proved valuable to their job performance. It also allowed them to take a step back from daily routine and reflect on the wider context in which they operate. For Filipino PhD students and senior staff members, experience in the program has opened up new perspectives. Being at a great distance from

Manila, opportunities for attending conferences and training courses abroad rarely reach the university campus. Through the program, a substantial number of staff members are in a position to attend such meetings.

For Dutch students, a period of six months of intensive fieldwork in the Philippines turned out to be a valuable asset. Many of them found jobs in national or international organizations active in environment and development, or in the ecotourism business; others opted to pursue PhD degrees at universities.

For CML, the work in the Philippines is one of two core elements of its Department of Environment and Development, the other being a similar program in northern Cameroon, together with the University of Dschang. Many research activities of this department are based on the work at these field stations.

Other benefits of CVPED activities are associated with various development projects. The presence and activities of CVPED have had certain spin-off effects within the region. Although it is hard to pinpoint exactly the extent to which CVPED ought to be acknowledged for these achievements, it is clear that the program has been instrumental in the formulation and acquisition of a number of projects for the region. Moreover, in each case, CVPED continues to play a supporting role in the research undertaken in these projects. Here we would like to mention four examples.

The Environmental Information Center (EIC)

As a result of the first working conference held by CVPED in 1991, there was a widely felt need to upgrade the physical infrastructure in the region with respect to environmental information. Through a special grant from Germany, PLAN International (a prominent NGO in the region) granted Isabela State University a substantial amount of money to erect a fully equipped Environmental Information Center, including a library, Geographic Information System (GIS) facilities, an herbarium, guest rooms, and lecture rooms. Officially inaugurated in 1994, the center hosts projects with external funding and is also regularly used as a venue for workshops and conferences.

The Northern Sierra Madre Natural Park Conservation Project (NSMNP-CP)

The first project proposal which CVPED submitted to the Directorate General for International Cooperation (DGIS), the Netherlands development agency, concerned biodiversity conservation in the northern Sierra Madre mountain region. The focus on biodiversity conservation emerged because the region was, and still is, internationally recognized as a "biodiversity hot spot": it has been identified as one of 18 centers of plant diversity in the Philippines (Madulid 1993 cited in DENR and UNEP 1997). The entire process of planning and procedure took CVPED and CFEM almost four years, from the conceptualization of the project in 1992 to its approval in 1995. The five-year project started in June 1996 with a total budget of more than US\$7 million, of which the Netherlands government contributed US\$5.5 million while the remaining sum came from the counterpart fund of PLAN International. PLAN International is in charge of project administration and implementation, while CVPED's contribution is through student research.

The project seeks to sustain the natural resource base of the NSMNP through improved community-based protection and conservation activities, and, at the same time, to enhance the quality of life of local communities. However, it is clear that the five-year period of the project was not enough to achieve the sustainable conservation of the NSMNP and to establish sufficient sustainable development alternatives for local communities. So far, the project has made significant headway in the conservation of the park's watersheds and the biodiversity contained therein, as manifested in a reduction in illegal activities (Araño and Persoon 1998). By the end of 2002, the Netherlands government had approved the second-phase project proposal, with Worldwide Fund for Nature (WWF) Philippines as implementing agency.

The Community-Based Forest Regeneration and Related Research Project (COMFREP)

The COMFREP evolved from direct discussions of the United States Agency for International Development (USAID) with CVPED and ISU staff, together with other key institutions involved in the sustainable

management of the forests and grasslands of the Cagayan Valley region. After long negotiations from 1995 to 1997, USAID granted a three-year funding of nearly US\$800,000 to PLAN International in a joint undertaking with CVPED. PLAN International became the primary grant recipient, in view of its good track record in the region, to handle project administration with the infusion of its own fund of US\$350,000. Meanwhile, ISU's CFEM and CML, through CVPED, carried out the research component. The COMFREP's long-term vision was for Isabela State University to become a center of excellence in community-based forest regeneration in northern Luzon. It aimed further to develop a sustainable buffer zone between these communities and the adjoining residual forests by initiating community-driven interventions. Its research components were geared toward exploring the production potential of the biophysical environment, identifying options for forest regeneration and forestland management, and empowering the local people in terms of health, education, and sustainable livelihood. The project ended in March 2001.

The Crocodile Research, Observance and Conservation Project (CROC)

Crocodylus mindorensis, the most severely threatened crocodile species in the world, was thought to be extinct in the island of Luzon. But, in 1999, a fisherman in San Isidro, Isabela Province, and later on field staff of the NSMNP-CP, found this species on the foothills of the Sierra Madre mountains. *C. mindorensis* surveys and conservation efforts were initiated by the NSMNP-CP shortly after, followed in 2002 by the CROC project, in cooperation with local stakeholders. The British Petroleum Conservation Program awarded the CROC project US\$65,000 to conduct research on this endemic Philippine crocodile species and contribute to its protection in the wild. Both Dutch and Filipino students and university staff have gathered data in joint research projects on the distribution, population size, population structure, and life history of the Philippine crocodile; the ecological functions of wetland systems; the impact of crocodile conservation on the local livelihood; and local perceptions of crocodiles. The project further supports the crocodile sanctuary and the community-based conservation program of the

municipality of San Mariano, Isabela Province (see Persoon and van der Ploeg, this issue).

Conflicts and Tensions

In the course of a long-term development cooperation program of this kind, various problems may emerge—some related to the management of the project, others to the type of research and the way it is implemented, or to the bureaucratic operating style of the partner institutions. Another source of tension is related to the value orientation of the researchers. Here we would like to say a few words on some of these issues.

Differences in Education and Research Traditions

There are big differences in the traditions of the Philippines and the Netherlands in terms of education and research. The ISU College of Forestry was initially very much a monodisciplinary institution aimed at research and education in production forestry. CML has long been an interdisciplinary center, including disciplines such as anthropology, biology, public administration, and economics. There are also huge differences in the emphasis on qualitative versus quantitative research, with Filipinos stressing the need to come up with figures, tables, and diagrams instead of just “stories.” Dutch anthropology students, in turn, were not impressed by the type of questionnaires that often formed the backbone of the research designs of their Filipino counterparts. Learning about other research paradigms has been an important aspect of interdisciplinary research groups.

Differences in Culture

Cultural differences between Dutch and Filipinos may not be obvious from the outside, but, under difficult circumstances during extensive fieldwork, these differences come out very clearly. Dutch students, most of them in their early twenties, the majority being females, and with little experience in developing countries, embark on their first professional adventure in the Philippines. On the other hand, Filipino

students are mostly somewhat older, married, and of course quite knowledgeable in the local conditions. Conflicts during fieldwork would arise on issues like "household tasks," criticizing the behavior of others, drinking customs, status-sensitive behavior, and the supposedly "macho" behavior of Filipino men and the "neocolonial" attitudes of the Dutch. In spite of the fact that during initial sessions their supervisors sensitized the students to differences in Dutch and Filipino customs, conflicts or disputes could not always be avoided. In a way, these are also valuable lessons for both parties.

Styles of Management

One of the important principles of the program is that the management style of the host institution is fully accepted by its partner. Thus, procedures were set up for making decisions about appointments, allocating budgets, and accounting for expenses. Responsibility for property purchased, like cars, motorbikes, computers, and the project's guesthouse, is clearly defined. The two coordinators in the Philippines manage daily operations, and about once a year, representatives at a higher level negotiate about the plan of operations for the coming year, the allocation of fellowships, and other issues. In this way, over the past fifteen years, and when compared with numerous other projects, there have been remarkably few serious disagreements about the use of cars and other facilities. Rules are clear and mutually accepted.

University Criteria

Even though this is a small university-to-university cooperation project, it does not mean that there are no differences in opinion as to what the program should achieve. At the end of the year, Leiden University measures the return on its investment in terms of numbers of educated students, dissertations, and other publications. Achievements in terms of development or nature conservation per se are deemed of less importance. For Isabela State University, the situation is somewhat different. Most of the research priorities are geared toward applied, government-directed research and technology development. Moreover, in the local context, political considerations are relevant in the selection

of research topics. There is certainly an inclination to stress local development needs when setting research priorities and assessing the applicability of research outcomes. There is far less emphasis on formal publications in peer-reviewed journals or books.

Discourse on Values in Environment and Development Planning

An interesting aspect of the international and interdisciplinary nature of the work of the program is the discussion on the values and norms on which environmental planning is to be based. What values should be given priority in setting the aims for a particular area? In an intuitive manner, most students operate from a particular value perspective, which in most cases is similar to that laid down in the ethical codes of professional associations. An anthropologist would above all emphasize the needs and rights of the local or indigenous people. A biologist, operating from a biodiversity perspective, would give priority to the protection of key species of plants or animals which may be almost extinct globally, but may be a pest locally (such as wild pigs and endemic birds). An environmental economist would almost automatically calculate the maximum sustainable harvest of available natural resources and pay less attention to how the benefits are distributed and whether this distribution is "correct" from a social perspective. In general, Dutch students tend to take a wider spatial view with regard to issues, such as biodiversity conservation and rights of indigenous peoples. They incorporate global discussions in reports on these issues. Filipino students tend to be more focused on local needs and problems and are less motivated by arguments in the sustainability debate, such as the "rights of nature" and a philosophical responsibility toward unidentified future generations.

Each topic of joint research within the fifteen-year span brought a new rhetoric to the forestry research agenda of the Filipino researchers. Anthropology, physical geography, environmental economics, environmental management, women and development, and biodiversity became embedded in the formerly homogeneous discipline of forestry. The project introduced local researchers to present-day development thinking and the importance of the various development interests and perspectives.

The Brain Drain

In every organization, movement of staff, vertically or horizontally, is considered a part of the usual course of events. It has both advantages and disadvantages. One of the advantages is the opportunity offered for junior staff to grow professionally. However, the principle of maintaining a balance between the growth and the drain is to achieve a sustainable level of competence in the organization. One of the problems of CFEM is that the number of positions is kept at a rather low level while the number of staff members with advanced education and training has increased considerably. Due to the growing number of opportunities outside the university with significantly higher financial rewards, some staff members opted for positions in other foreign projects and consultancy firms. This loss of senior staff members is certainly a brain drain that is hard to fight. The timing of staff movements, when international grants and projects come into the region and elsewhere, is directly related to opportunities to earn more and to practice their profession in the field, given the limited attractive programs the university can offer. Even though people who have benefited from fellowships and training programs are obliged to serve the university for a predetermined period, this policy turns out to be difficult to enforce. As a result, the aim of strengthening the research and educational capacities of the college or of the university as a whole is not sufficiently met.

The conflicts and tensions that arise during a long-term cooperation program vary in intensity and scope. Over the years, the successive coordinators and their superiors have been able to manage these conflicts without any major escalation. At no point was the cooperation program in danger because of a particular conflict. It should be stressed that many of these conflicts were not solved in the sense of a once-and-for-all solution. Conflicts were managed. But there was also a degree of acceptance of ill-understood procedures. A policy of mutual non-interference prevailed. On some occasions, people also realized that tensions originating from cultural differences or standard bureaucratic procedures of the partner institutions sometimes could not be solved. In some cases, the tensions simply have to be accepted.

In CFEM, faculty members who have an advanced degree or have published the results of their research earn points necessary for being promoted to higher academic ranks, in addition to a possible appointment to higher administrative positions. An academic promotion results in a salary increase.

The additional expertise earned from both formal and informal CVPED training has provided CFEM staff members with the skills required for their assigned tasks, including curriculum development, teaching, research, extension, and production. Other skills acquired are useful for the design, formulation, implementation, monitoring, and evaluation of development projects. These skills are more beneficial for program grantees working outside the academic environment, or working with line agencies mandated as chief operators in the management of natural resources, particularly the DENR and the Office of the Northern Cultural Communities (ONCC; now the National Commission on Indigenous Peoples, or NCIP).

The benefits of the program for CML as a university-based institution result primarily from the long-term presence in the region and the accumulation of an extensive resource database that allows for a series of follow-up studies. Other benefits are derived in terms of the quantity and quality of the field research conducted by students. Compared with similar projects, we feel CVPED has several comparative advantages: It offers opportunities for teamwork, and is closely connected to the "real" world of environment and development projects while maintaining a theoretical basis. The substantial knowledge base can be drawn upon for scholarly output in terms of articles and dissertations in both collaborating institutions. The program also yields knowledge and experience that can be used for contract research, which is financially attractive and, at the same time, academically rewarding.

The Future of Cooperation

Boeren's sustainability matrix clearly visualizes CVPED's endeavor to achieve academic, technical, and financial sustainability at the project, institution, and cooperation levels. The program has been set up in

such a way that it stimulates an evolutionary process of cooperation between its partners, through trial and error and step-by-step development, while adjusting to the absorption capacity of both universities and the supporting capacity of their external environments. In general, the problems of developing countries in environment and development are complex, and solutions can only be found using a long-term approach. Development research, too, requires a long-term perspective. Ten years may be a minimum period of time for producing results in a development context. Short-term support, in turn, can be designed for narrowly defined programs with the aim of attaining measurable results. CVPED envisions such a long-term institutional cooperation which, in the long run, will be of mutual interest. It is also a learning process because it takes time to build up an effective research tradition where knowledge is expanded, and theoretical ideas formulated and tested in the field.

Long-term research programs should consist of three elements: building up of human capacity; expansion of an empirical knowledge base; and absorption, transfer, and validation of this knowledge. Strengthening the research capacity of developing countries is naturally important, too. Long-term support on an institutional basis with a focus on capacity building should incorporate local researchers' priorities and needs while developing an attitude of self-reliance by local partners in solving their own problems.

A question that is often posed by outsiders is when this program will come to an end. As stated earlier, the agreement between the universities does not stipulate any predefined duration. As long as both institutions consider the cooperation as fruitful by their own criteria, there is no need to terminate the program. For Leiden University, the criteria stress education, in particular student research projects and research output (articles, reports, dissertations). For Isabela State University, there is a need for output in terms of contribution to the region's development process, in addition to educating students, publishing academic articles, and upgrading staff and infrastructure.

Of course, this output also needs to be evaluated in terms of efficiency of means and human power. So far, the balance has been positive, although there has been some inclination to look for "greener

pastures." The relatively small investments on a yearly basis on both sides have yielded a kind of cooperation and a level of benefit for both institutions that cannot easily be transferred or reproduced in another site. On the contrary, both partners have the impression that the potential of the research station is still not being fully utilized. At present, ways are being explored to expand the scope of cooperation with other institutions in the Philippines and elsewhere. The situation regarding the natural and cultural landscape, as well as sociopolitical conditions and developments in the area, is dynamic. In spite of the comparatively long presence of the program in the area, new research is still fascinating and yields interesting results.

Appendix: The Cagayan Valley

The Cagayan Valley in northeast Luzon is bounded by three mountain ranges, the Sierra Madre on the east, the Cordillera on the west, and the Caraballo on the south. To the north lies the Babuyan channel, beyond which is the South China Sea. The region, officially Region II in the Philippine administrative structure, has a total land area of 26,838 square kilometers, and is, for the most part, mountainous. It comprises the following provinces: Cagayan, Isabela, Quirino, Batanes, and Nueva Vizcaya. The regional capital is Tuguegarao, about 485 kilometers from Manila along the Maharlika Highway. It has a tropical monsoon climate (with a mean annual rainfall of 1,500–2,000 millimeters), and a relatively dry period from December to April, and a wet season during the rest of the year (Boquiren 1992). During the wet season, the area is often struck by typhoons, which contribute significantly to the total annual rainfall.

The population of the region is about 2.8 million (census of 2000), registering an annual growth of 1.8 percent from 1990 onwards. Regional population density is a little over 100 persons per square kilometer, which is far below the national average of more than 200 per square kilometer. This makes the Cagayan Valley one of the least densely populated areas in the country. The population is predominantly rural and lives in the countryside in small villages (*barangay*) and hamlets (*sitio*). Capital towns and the major commercial centers are all located along the national highway, which runs parallel to the Cagayan River. The only exception is San Mariano, a boomtown close to the Sierra Madre, which grew extensively in the 1970s and 1980s due to the logging industry.

The population is ethnically highly diverse. In addition to local groups, such as the Bugkalot, the Gaddang, the Itawi, and the Agta (the original hunter-gath-

erers in the forest of the Sierra Madre), numerous groups of migrants have entered the area. The Ilocano from northwest Luzon are, by far, the most numerous, and their language functions as a kind of lingua franca more than Tagalog, the official national language. In recent years, ethnic groups from the Cordillera, like the Ifugao, the Kalinga, and the Tinggian, have migrated to the foothills of the Sierra Madre in search of arable land. Many of them consider the Sierra Madre as "empty land."

On the eastern side of the Cagayan Valley, which is the focus of the research program, four kinds of land use can be distinguished:

1. Intensive agriculture, including irrigation, on the fertile plains of the Cagayan River. The dominant crops are irrigated rice and corn (formerly also tobacco).
2. Extensive grasslands with cattle raising and some agricultural activities on the foothills of the Sierra Madre adjacent to the fertile plains.
3. Logged-over forest between the grasslands and the undisturbed forests. In this transition zone at the forest fringe, there is limited logging, as well as agricultural activities based on slash-and-burn techniques mainly by migrant farmers. A commercial logging ban was proclaimed in 1992, which ended large-scale logging operations.
4. Closed canopy rainforests and mossy forests covering the Sierra Madre mountains, and reaching in places to the Pacific Ocean on the eastern side. These are inhabited by the Agta, the indigenous Negrito people, who practice hunting and gathering and some agriculture. A large part of this forest is now under the National Integrated Protected Areas System (NIPAS) Act.

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