

Mid-term review of FADCANIC Sustainable Agroforestry Development Program (SAD) - Phase II, Nicaragua

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Falguni Guharay

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Norad
Norwegian Agency for Development Cooperation

P.O. Box 8034 Dep, NO- 0030 OSLO
Ruseløkkveien 26, Oslo, Norway
Phone: +47 22 24 20 30 Fax: +47 22 24 20 31

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Final Report

Mid-term review of

NIC-2246

FADCANIC SUSTAINABLE AGROFORESTRY
DEVELOPMENT PROGRAM (SAD)-PHASE II

By

Falguni Guharay
fguharay@gmail.com

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Preface

In 2004 the Norwegian Embassy in Nicaragua and FADCANIC entered into an agreement to implement the project NIC 2246, *FADCANIC Sustainable Agroforestry Program (SAD) Phase II (2004-2007)*. Per the agreement, the Foundation for the Autonomy of the Atlantic Coast (FADCANIC) has received funding from Norway to implement the second phase of its program of Sustainable Agroforestry Development in the five municipalities of the Autonomous South Atlantic Region of Nicaragua (RAAS). Aimed at consolidating the results of Phase I, the target group of the program has been defined as 2600 families (about 15,000 persons) in 75 rural communities. Approved amount for the program is NOK 9.0 million for 2004-2007.

The implementation of the program began in September, 2004 and is scheduled to end in August, 2007. In February 2007 FADCANIC and the Norwegian Embassy in Nicaragua jointly selected a local consultant with experience in environment/agroforestry project evaluation to carry out the mid-term review of the program. The Norwegian Embassy hired the services of the consultant to carry out the mission and the mid-term review was carried out during February and March 2007.

In accordance with the terms of reference developed for the mid-term review, the purpose of the review was to perform a quantitative and qualitative evaluation of the degree of compliance of the expected outputs from October 2004 to December 2006, in accordance with impact indicators and expected outputs in the approved project.

This report, prepared in compliance with the terms of reference, summarizes the findings and recommendations of the mid-term review mission. Although this report has been prepared with the financial assistance of the Norwegian Embassy in Nicaragua and with participation and logistical support from FADCANIC, the views expressed herein are those of the consultant and may not necessarily reflect the official opinion of FADCANIC or the Norwegian Embassy in Nicaragua.



Falguni Guharay
Consultant
Managua, Nicaragua

List of acronyms

FADCANIC	Foundation for the Autonomy of the Atlantic Coast
RAAS	South Atlantic Autonomous Region of Nicaragua
NOK	Norwegian Kroner
MAGFOR	Ministry of Agriculture and Forestry
MARENA	Ministry of Environment and Natural Resources
MFA	Ministry of Foreign Affairs, Norway
CIFOR	International Center for Forestry, Indonesia
ICRAF	International Center for Agroforestry, Kenya
CATIE	Tropical Agricultural Center for Research and Higher Education

Executive summary

1. In 2004, the Norwegian Embassy in Nicaragua and FADCANIC entered into an agreement to implement the project NIC 2246, *FADCANIC Sustainable Agroforestry Program (SAD) Phase II (2004-2007)*. Per the agreement, the Foundation for the Autonomy of the Atlantic Coast (FADCANIC) received funding from Norway to implement the second phase of its program of Sustainable Agroforestry Development in the five municipalities of the Autonomous South Atlantic Region of Nicaragua (RAAS). Aimed at consolidating the results of Phase I, the target group of the program was defined as 2600 families (about 15,000 persons) in 75 rural communities. The approved amount for the program was NOK 9.0 million for 2004-2007.
2. Implementation of the program began in September 2004 and is scheduled to end in August, 2007. In February 2007 FADCANIC and the Norwegian Embassy in Nicaragua jointly selected a local consultant with experience in environment/agroforestry project evaluation, to carry out the mid-term review of the program. The mid-term review was carried out during the February and March 2007. This report, prepared in compliance of the terms of reference, summarizes the findings and recommendations of the mid-term review mission.
3. Assessment of the program objectives and outputs was done by compiling observations, data and information from field visits, group discussions, reports, and interviews using a qualitative scale of four levels: *Not Initiated, Initiated, Advanced and Achieved*. According to the analysis, two of the immediate program objectives have advanced to the level of “*Achieved*” and the rest have reached the level of “*Advanced*” as of December 2006. Based on the assessment of the advances of the objectives and outputs, we consider that the program has advanced satisfactorily towards its objectives during the period under review.
4. All beneficiaries, local authorities, representatives of public organizations and municipal governments consulted during the review mission expressed that the program was highly relevant for a wide range of actors and organizations in the region. To get a more profound understanding of the relevance of the program we also used the method of local indicators. The analysis indicated a high degree of convergence between the program outputs and the local indicators for rural development. However, there are some important local indicators which are not addressed by the program or addressed in a limited way. We strongly recommend that the local indicators be taken into account while formulating the next phase of work.
5. We conclude that during program implementation, an efficient internal routine of planning, implementation and reporting has been carried out. It is also evident that an internal mechanism of monitoring and follow-up has been put in place, with a detailed scheme of indicators for the results and objectives. We confirm that the use of funds for the different items has been in accordance with the program budget with the exception of the construction of municipal offices and internal travel due to increased gasoline prices since 2005. Audited financial reports support our conclusion.

6. An assessment of advances of program objectives and outputs reflects a satisfactory degree of effectiveness for the program. However, the information on the *current status of agroforestry initiatives in the promoters' farms* and the *number of farm households with agroforestry initiatives in the communities* reveals that in spite of significant advance with the promoters, the program faces serious difficulties to achieve a dissemination of the successful agroforestry initiatives in the communities. The effectiveness of the program depends highly on the success of local agroforestry networking.
7. Under *optimistic scenario*, average program investment per beneficiary is around US \$ 840 for three years. Under *pessimistic scenario*, average program investment per beneficiary is around US \$ 1087 for three years. These numbers indicate a satisfactory level of economic efficiency of the program relative to other programs in the country and in the region. However, considering the whole range of impacts that the program wishes to achieve,, we conclude that the program investment per beneficiary, especially for the capacity building component of the communities and territorial planning is low; this may affect the quality of the results.
8. We developed the discussion on sustainability of the program achievements around FADCANIC's capacity to scale out the program experiences, capacity of the agroforestry networks in the communities to sustain the processes and economic returns from the agroforestry initiatives fueling adoption and growth of the systems. In our opinion, the critical issue in the sustainability of program advances is the local agroforestry networks' weakness to pursue the present and future goals of sustainable agroforestry in the communities and the region. At a micro-economic level, it is expected that higher and more sustainable economic returns from the agroforestry systems should help wide-scale adoption of these systems. Currently many of the systems established during the program are barely coming into production and therefore, we do not have sufficient information to draw conclusions regarding the sustainability of the program achievements.
9. *"We hope that women in the communities are now becoming a source of knowledge and power for their families and their children in addition to being the primary source for food and love."* This reflects a very practical way to understand and implement gender equity. During the program implementation, gender equity has advanced significantly through sharing of knowledge and income between men and women in the families. However, in many communities, more work is needed to improve the situation of sharing of power between men and women in the household and the communities which affect decision-making processes. Definitely much more work is needed to eradicate family violence.
10. We conclude that natural resource conservation has been a cross-cutting theme in the essence of the program and its stakeholders throughout the discussions and decision-making. We consider that significant advances have been made in this aspect through a wide range of creative program initiatives. The extent of agricultural burning has also reduced significantly in the project areas over the last years. We have identified four critical questions that merit more strategic thinking at this time.

11. Working with ethnic groups is a fundamental part of the mission, vision and organizational strategy of FADCANIC, and we conclude that the program has made significant progress in this aspect. However, we have identified five issues that must be addressed to further improve the implementation of the ethnic focus in this and future FADCANIC programs.
12. We have reviewed the results included in sections 4.5, 4.6, 4.7, 4.8, 4.9 and 4.10 of section 4 “Obligations of FADCANIC” in the contract signed between FADCANIC and the Norwegian Ministry of Foreign Affairs on 29.09.04 and found that with the exception of the program base-line report that was due on January 30, 2005, FADCANIC has fulfilled all the other obligations.
13. In order to advance the program objectives further and create conditions for the sustainability of the program achievements, we have recommended eight specific tasks that the program should focus on from now until September 2007.
14. In order to guarantee that the program achieves all of its planned objectives and that program lessons are available for a future program of wide-scale implementation of sustainable agroforestry across the region, we have recommended that FADCANIC and the Norwegian Ministry of Foreign Affairs discuss the possibilities of additional funding to continue the program through December 2008. We have identified ten specific tasks that the program should focus on during this period in the report.
15. We strongly recommend that FADCANIC and the Norwegian Ministry of Foreign Affairs engage in an urgent dialogue to explore the possibilities of continuing the cooperation towards a future program of wide-scale implementation of sustainable agroforestry in the region. The new program, based on the lessons from the past programs, must also innovate new ideas and pathways to make sustainable agroforestry a key element in the economic development of farm households in the humid tropics of Nicaragua; this is the first step towards true autonomy for the Atlantic region. As the current program comes to an end in September 2007, we recommend that negotiations about the future cooperation be initiated immediately.

1. The Program

The Foundation for the Autonomy of the Atlantic Coast (FADCANIC) is a legal non profit organization whose main objective is to promote, develop and strengthen the autonomy process of the Atlantic coast regions of Nicaragua. Based on its statute approved by the National Assembly in 1987, its actions include training, education, health, forest and farming development, promotion of a gender approach, support of artisan fishery, culture, production and activities that contribute to improving the socioeconomic well-being of the low-income population.

During 1999-2004, FADCANIC received support from Norway (NOK 12.0 million) for Phase I of the Sustainable Agroforestry Program. The program was implemented in five municipalities (El Rama, Kukra Hill, Bluefields, Pearl Lagoon and El Tortuguero) in the southern part of the Autonomous Atlantic region (RAAS). The target group was 2400 families living in 75 communities. The results achieved during this phase were: a) establishment of an agricultural research and training center in Wawashang; b) the presence of the program in five municipalities and the application of a participatory rural development and gender-based model in 75 communities; c) the implementation of the environmental agendas by the involved communities; d) a credit program managed by the communities; and e) the formulation of a strategic plan in support of the program's sustainability (Paulsen, 2004, Phase II appraisal document)

During 2003, FADCANIC presented a five-year proposal to the Norwegian Embassy in Nicaragua for a second phase, which was to consolidate the activities of Phase I and to extend the program in the municipality of La Cruz de Rio Grande and to more communities in El Rama, in order to have better coverage of the surrounding watershed systems. The target group of the program was to increase to 3000 families and 35 communities. The Phase II proposal had a duration of five years and the funds requested for the implementation of the program were approximately NOK 21.5 million (Paulsen, 2004, Phase II appraisal document).

In 2004, an appraisal mission recommended Norwegian support to FADCANIC for the implementation of Phase II of the Sustainable Agroforestry Program (with a duration of five years and approximate funding of NOK 21.5 million) with specific recommendations related to updating the project proposal and the logical framework, improving the base-line indicators, putting in place a commercialization strategy, establishing a management plan for the Wawashang reserve, studying the issue of introduction of exotic species (especially fish), creating a stronger network with external organizations and a strategic partnership with ministries of agriculture, forestry (MAGFOR) and natural resources (MARENA) of Nicaragua and conducting an organizational audit of FADCANIC to improve the efficiency of different funding sources (Paulsen, 2004, Phase II appraisal document).

In 2004, The Foundation for the Autonomy of the Atlantic Coast (FADCANIC) received funding from the Norwegian Embassy in Nicaragua, for the implementation of Phase II of their Sustainable Agroforestry Development program in the five municipalities of the Autonomous South Atlantic Region of Nicaragua (RAAS). Aimed to consolidate the results of Phase I, the target group of the program is 2600 families (about 15,000 persons) in 75 rural communities of five municipalities. Phase II of the program is to be implemented over three years and will have Norwegian support for NOK 9.0 million for 2004-2007.

The development goal and overall objective of the program is to continue contributing to poverty reduction and the sustainable natural resource use by consolidating the gains of Phase I in 75 communities in five municipalities of the South Atlantic Autonomous Region (RAAS).

The immediate objectives of the program and the corresponding *outputs of the program* are as follows:

A.1: To increase the capacity of the Sustainable Agroforestry Center in Wawashang to generate and disseminate the appropriate techniques for natural resource management.

- *Agricultural experimentation plots and germplasm collections in the Agroforestry Center expanded; results are published quarterly in a journal.*
- *Agroforestry Centre has produced certified seed for 6000 hectares of perennial crops and forest species to benefit 2,600 rural families.*
- *Infrastructure, equipment, transportation and supplies requirements for the optimum functioning of the Centre during Phase II are in place.*
- *The technical staff required for the implementation of Phase II has been hired and properly trained.*

A.2: To improve the capacity for sustainable production and management of agroforestry systems in the communities within a framework of participatory action and gender equity methodology.

- *The agroforestry demonstration plots started in Phase I are consolidated to provide communities with the information and knowledge required for a successful expansion of the credit component, exchange of seeds, and the implementation of local environmental agendas*
- *Since 50% of the plots were managed by women during Phase I, Phase II has motivated the incorporation of new women to the Program*
- *The model to create new knowledge on sustainable production in a participative manner and with gender equity has been consolidated.*

A.3 To Contribute to territorial zoning and the management of the local environmental agendas by the communities in order to improve sustainable natural resource use and the biodiversity conservation in the tropical rainforest.

- *Each community has a territorial zoning plan, II jointly agreed by men and women of the community, at the end of Phase.*
- *There is a municipal environmental planning concept jointly developed by the program and the local and regional governments during the third year of Phase II.*
- *The communities' local agendas allow for the production of environmental services and the improvement of livelihoods of the rural and urban population, in terms of access to water, energy, tourism and forestry resources.*
- *An environmental education program is in place in each municipality covered by the Program*

A.4 To reduce poverty by means of increasing the coverage and self-management of the credit system within the framework of territorial zoning and strengthening of local associations.

- *From experience obtained in Phase I, a consolidated credit program is strengthened and fully functioning.*
- *Women's capacity in credit management has been strengthened through training and literacy programs. At least 50% of the women are beneficiaries of the training programs.*
- *The income levels of 1,600 families have been improved by activities compatible with environmental conservation.*
- *Half of the credits are channeled through local finance groups (Producer associations and non conventional financing intermediaries).*

A.5 Secure self-sustainability and multiply the positive effects through the institutional strengthening of the executing agency and the alliances with other agencies involved in rural development.

- *The efficiency and the level of specialization of the human resources of FADCANIC have been increased to optimize Project management*
- *The efficiency and the level of specialization of the human resources of FADCANIC have been increased to transfer experiences to other municipalities of the Atlantic Coast.*
- *Publicity related to the success of the program has generated new collaboration with other agencies.*
- *Coordination with relevant governmental agencies has allowed gradual institutionalization and appropriation by those agencies of the program results.*

2. The mid-term review

Program implementation began in September 2004 and is scheduled to end in August 2007. On February 20, 2007, the Norwegian Embassy in Nicaragua hired the services of a consultant to carry out the mid-term review during the months of February and March 2007. As described in the terms of reference (Annex a) the purpose of the mid-term review was to perform a quantitative and qualitative evaluation of the degree of compliance of the expected outputs from October 2004 to December 2006, in accordance with impact indicators and expected output in the approved project.

The scope of the review was to encompass:

- *Impact of achieved outputs related to approved plans and budget (Effectiveness)*
- *Relation between resources and outputs (Efficiency)*
- *Project's appropriation level by beneficiaries (Relevance)*
- *Sustainability perspectives (institutional, economic, technical)*
- *Quality of project management (Accounting and Audits)*
- *Gender focus (separate section within the final report)*
- *Environmental benefit (separate section within the final report)*
- *Participation and response of ethnic groups*
- *Identification of problems, bottlenecks and their causes (pointing to recommendations for their solution)*

Taking into considerations the purpose and scope of the review, the consultant, in consultation with FADCANIC, prepared a work plan and specific instruments for the review. The work plan was presented to the Embassy and FADCANIC at the very beginning of the mission, on February 22, 2007. (see Annex b).

Field work was carried out between February 26 and March 9, 2007 in three municipalities (El Rama, Kukra Hill and Pearl Lagoon) including a 2-day visit of the Agroforestry Center in Wawashang. Various participatory evaluation methods (see Annex c) were employed during field and farm household visits (11 cases), focal group discussions (3 groups) and stakeholder interviews (10 on-site surveys and informal discussions) to understand and document program advances and the need for follow-up taking with the participation of program beneficiaries and stakeholders.

During the period March 10-13, 2007, the consultant worked with the project implementation team through semi-structured interviews (11 interviews), group discussions (3 groups) and informal conversations (with most members of the project team). Information on the quantitative and qualitative advances of the project was also accessed through a series of presentations (10) prepared by the project team, a number of project documents (5), semestral Work Plans and reports (10 documents), and internal monitoring reports (5 documents). The list of persons visited and interviewed is presented in Annex d and the list of documents consulted is presented in Annex e.

On March 14, the Consultant presented the main findings and recommendations to the project implementation team and other members of FADCANIC and their viewpoints were incorporated into the report (Annex f). On March 22, the consultant made a preliminary oral presentation of the main findings of the mid-term review mission to the Norwegian Embassy and FADCANIC and submitted a draft report in English to elicit comments from the Norwegian Embassy and FADCANIC. After receiving the comments from the Embassy and FADCANIC, a final report in English (both paper and electronic versions) were presented to the Norwegian Embassy. The final report took into consideration the comments and suggestions from the Norwegian Embassy and FADCANIC (Annex g).

3. Findings of the mission

3.1 Observations from farm household visits

According to the project document and work plans, 2600 farm households participate and benefit from FADCANIC's agroforestry program in five municipalities of the Southern Autonomous Atlantic Region of Nicaragua (RAAS). To reach these 2600 farm households, FADCANIC works with 160 rural promoters (50% women) elected by the program beneficiaries in 80 communities covered by the program. The rural promoters are supported by the FADCANIC team and in turn attend to the 2600 families through local environmental agendas and local credit committees set up in the communities. We visited 11 farm households in different communities located in the municipalities of El Rama, Kukra Hill and Pearl Lagoon (details in Annexes b and d). All the farm households visited belonged to the promoters of the respective communities. Each farm household visit lasted approximately 4 hours and included a tour of the farm (2.5 hours) and semi-structured interviews with the members of the farm households (1.5 hours). We will use the information from four farm households to illustrate salient observations on the changes.

Changes in the land use patterns in promoters' farms

The most significant positive change that occurred in all the farms was the introduction, establishment and commercial production of perennial crops like plantains, cocoa, fruit trees, coconut, and pejibaye palm. These crops were originally cultivated in mixed tree plots (2 ha/farm) and more recently are being planted in larger mono-crop commercial plots (between 1 and 3 ha). The other striking change was the introduction of small farm animals (hens, pigs and sheep) which are now successfully raised by the families to produce food and generate income.

One of the negative changes observed in some farms was the significant increase in number of cattle and pasture. The increase in the area for pasture was obtained at the expense of secondary forests. Only a small part of the pasture is under silvopastoral management (with trees) and most of the area can be considered degraded. We also observed that, many of the promoters still burn the areas dedicated to cultivation of maize, rice and cassava for pest and weed control and some use herbicides in these crops. As extensive cattle raising in degraded pasture lands and agricultural burning remain the principal threats to the environmental and economic sustainability of the humid tropics, the program needs to address these issues more vigorously in the coming years.

Changes in the socio-economic parameters for the farm households

The introduction, establishment and production from the perennial crops and small farm animals have had significant impacts on food security and nutrition of all the participating families. In addition, wells constructed through the local environmental agenda have improved the drinking water situation for most of the families. However, only a few families have been able to increase their income from the diversified production on the farm and this remains the principal challenge for the program in the coming years.

Changes in the land use patterns in farms of promoters

	Doña Ramona Mosquitia		Doña Lucrecia Zompopa		Doña Karla Pichy Aiwas		Don Humberto Nicaragua	
	Before (1991)	Now (2007)	Before (1990)	Now (2007)	Before (2001)	Now (2007)	Before (2001)	Now (2007)
Natural Forest	0	0	30 mz	30 mz not managed	20 mz	5 mz (cleared)	2 mz	5 mz not managed
Forest patches	10 trees	4 mz	40 mz	40 mz not managed	0	0.5 mz not managed	0	8 mz not managed
Timber plantations	0	2 mz (mahogany, cedar)	0	0 (800 mahogany were planted but did not survive)	0	0	0	0.25 mz firewood
Secondary forest	48	0	50 mz	15 not managed	50 mz	10 mz not managed	0 mz	10 mz not managed
Pasture	0	25 mz	70 mz	120 mz	0	0	0	0
Corn	0	2 mz	0	2 Mz herbicides, burn	50 yds	50 yds	1.0 mz	0.5 mz
Beans	0	1 mz	0	2 mz	25 yds	25 yds	1.0 mz	0 mz
Rice	0	0	0	4 mz herbicides, burn	1 mz	1 mz, burn	0 mz	0 mz
Cassava	0	0.5 mz	0	1 mz, burn	0.5 mz	0.25 mz, burn	1.0 mz	0.25 mz
Plantains	0	0	0	1 mz	0	0.5 mz	0	0.75 mz
Cocoa	0	150 plants	0	0.5 mz	0	120 trees	0	0.5 ha
Mixed Tree plot	0	2 ha	0	2 mz	0	2 mz	0	0.5 ha
Coconut	0	3 mz	0	1 mz	0	125 plants 85 died	0	80 plants not thriving
Fruit plots	0	3 mz	0	100 trees	0	50 trees	0	250 trees wide varieties
Pejibye (palm)	0	1 mz	0	110 plants 35 in nursery	0	0	0	40 palms
Live Fence	0	500 yds	0	0	0	0	0	150 yds
Dead Fence	0	3000 yds	0	3000 yds	0	0	0	300 yds
Cattle	0	6 own, 20 shared	6 own	30 own 28 shared	0	0	0	0
Pigs	0	1	0	8	0	1	0	3
Hens	0	30	0	50	15	30	3	30
Hair	0	4	0	20	0	0	0	16

(Positive changes brought about by the program marked in green, negative changes marked in red)

Changes in the socioeconomic parameters for the farm households

	Doña Ramona, Mosquitia		Doña Lucrecia, Zompopa		Doña Karla, AIWAS		Don Humberto, Los Angeles	
	2001	2006	2001	2006	2001	2006	2001	2006
Cash income	1000 C\$/m daily labor on other farms	4000 C\$/m Sell some fruit and beans, but most of the increase is due to increased sale of milk	2000 a 3000 C\$/m	2000 a 3000/C\$ m Sell coconut and other food products	4500 C\$/m, (3000 fishing, 1500 salary)	2150 C\$/m , (2000 fishing, 150 produce) Sell some food products	300-500 C\$/m	1200 C\$/m (produce) Sell plantains and other food products
Food and nutrition		Improved Produce a good part of the food on the farm		Improved Produce a good part of the food on the farm	Buy food	Better now, Produce a good part of the food on the farm	Buy food	Improved, Produce food
Health		Improved		Worse kidney problems		Improved		Improved
Education		Improved		Improved		Improved		Improved for young, not for old
Drinking water		Not yet, Well to be finished		Improved, Has a well		Improved, Has a well		Improved, has a well

(Positive changes brought about by the program marked in green, negative changes marked in red)

3.2 Observations from focal groups

Focal groups were conducted with the participation of promoters to validate our observations from the farm visits in the context of the communities and to obtain more information about the quality of the social processes in the communities. Eleven promoters (5 women and 6 men) participated in the focal group discussion in El Rama, nine promoters (3 women and 6 men) in Kukra Hill and five promoters (2 women and 3 men) in Pearl Lagoon. Information from the group discussions is summarized in the table on page 13.

Active Promoters in the communities and women promoters: Based on the information provided by the promoter participating in the focal group discussions, the average number of active promoters in the communities was 2 (range of 1-3) and the average number of female promoters in the communities was 1 (range of 1-2). Considering that the program is active in 80 communities, we estimate that there are 160 active promoters involved with the program in the five municipalities and that 50% of them are women.

Number of farm households involved in local environmental agendas: According to the information provided by community promoters, the average number of farm households involved in the activities planned within local environmental agendas was estimated at 7 per community. Considering that the program is being implemented in 80 communities, this indicates the involvement of 560 farm households in the local environmental agendas. However, according to the archives and documentation of the program, 847 households have been registered to be active in the activities of the local agendas in 80 communities.

Number of farm households involved in the credit component and adult education: The average number of households involved in the credit component was estimated by the promoters to be 15 per community, which results in a total of 1200 farm households involved in the credit component. However, the archives and documentation of the program indicate that 1640 households in 66 communities have been involved with the credit program, 39% of them being women. About 600 men and women have also benefited from the adult education program which has given them a better capacity to learn and manage their credit.

Quality of work of rural promoters and farm household response: To evaluate these aspects we used a scale of 0, 1, 2 and 3, indicating the states of *non-existent*, *poor*, *average* and *good* for these variables. According to the rural promoters (n=20), the quality of promoters' work has an average value of 1.9 (close to average) and the quality of farm household response has an average value of 1.6 (in between poor and average). There was a general agreement that their formation as rural promoters is not adequate and may be the reason why the response of the farm households to their work is generally poor.

Quality of functioning of the local agenda committees and local credit committees: According to the promoters (n=20), the average value for the functioning of the local agenda committees is 0.9 (close to poor) and the value for the functioning of the local credit committees is 2.5 (close to good). The contrast between the qualities of functioning of these two committees in the same communities reflects the difference in relevance of the themes for the communities and the beneficiaries. It was obvious that beneficiaries are much more interested in credits than the local environmental agenda; the challenge is how to link these two themes.

Results from focal group discussions about promoters, local environmental agendas and credit committees

	EL Rama										Kukra Hill							Pearl Lagoon						Global
	C1	C2	C3	C4	C5	C6	C7	C8	C9	Average	C1	C2	C3	C4	C5	C6	Average	C1	C2	C3	C4	C5	Average	Average
# of active promoters in the communities	2	2	2	2	2	1	2	2	2	2	1	3	2	2	3	2	2	2	3	2	3	3	3	2
# of women promoters	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	2	2	1	1
# farm households involved in local agendas	4	10	8	10	6	5	4	6	4	6	0	15	0	12	14	6	8	13	1	15	15	1	9	7
# farm households involved in the credit component	30	15	33	30	15	20	24	39	12	24	10	10	10	2	5	24	10	1	0	6	5	0	2	15
Quality of work of promoters (measured on a scale of 0-3)	2	3	2	1	2	2	2	2	1	1.9	2	2	1	1	2	2	1.7	2	1	2	3	2	2.0	1.9
Quality of response of farm households (measured on a scale of 0-3)	2	2	2	2	2	1	2	2	1	1.8	1	2	1	1	1	1	1.2	3	1	1	2	1	1.6	1.6
Quality of functioning of Local Agenda Committee (measured on a scale of 0-3)	1	1	1	1	1	0	1	1	0	0.8	1	2	0	0	2	0	0.8	1	1	2	0	1	1.0	0.9
Quality of functioning of Credit committee (measured on a scale of 0-3)	2	2	2	2	2	3	2	3	3	2.3	2	2	3	3	3	3	2.7	0	0	3	3	0	1.2	2.5

3.3 Observations from the visit to the Agroforestry Center and to the Kahka Creek Natural Reserve

Together with the Program Coordinator, Coordinator of the Center, Program technical advisor and the forest guard, the reviewer visited different areas of the Agroforestry Center in Wawashang and the Kahka Creek Natural Reserve.

In the Agroforestry Center located in Wawashang, we observed that:

- In the last few years there has been significant improvement of the infrastructure, equipment and transport facilities of the center which allows it to be able to carry out its work more efficiently and effectively
- In the last few years, the center has established, expanded and characterized its germplasm collection of coconut, cocoa, Pijibeye palm, Musaceas and different fruit trees.
- The center also has groups of specialized and trained human resources and an organized work plan that is contributing to the improved capacity of production of hybrid coconut and cocoa seeds.
- There are some difficulties related to follow up of protocols for production and distribution of hybrid cocoa seeds (mixing of 5 different hybrids and not distributing one hybrid per farmer), but this will be improved in the very near future.
- The center is still not certified by MAGFOR as a seed production center; hopefully this will be achieved soon before the end of the program.
- The students of the Agroforestry school and groups of visitors organized through many different projects have visited the center frequently to learn about germplasm and management of different crops

In the Kahka Creek Natural Reserve we observed that:

- The basic infrastructure for the functioning of the natural reserve as a learning unit has been established and soon the center will be ready to lodge visitors
- Significant efforts of reforestation and rehabilitation of the damage by hurricane Beta have been carried out.
- Nature observation trails and resting huts have been put in place for visitors to access nature and learn about biodiversity in the humid tropics
- A detailed management plan has been developed for the Kahka Creek Natural Reserve which may serve as a model for the other reserves in the area.




3.4 Information from reports and presentations of results prepared by FADCANIC and interviews with project team members

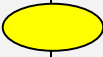


A series of very useful presentations and reports were prepared by different members of the FADCANIC team. The reviewer listened to the presentations, studied the reports and discussed the contents with the team in order to assess the advances of specific results and objectives of the program.

4. Conclusions of the mission

4.1 Assessment of program achievements as of December 2006

Assessment of the program objectives and outputs was done by putting together observations, data and information from field visits, group discussions, reports, and interviews using a four-level qualitative scale: *Not Initiated*, *Initiated*, *Advanced* and *Achieved*. In most cases, the reviewer and the team coincided in their assessment (RT). In case of divergence of opinions, the opinions of the reviewer (R) and the team (T) are both represented in the following tables.

	Not initiated	Initiated	Advanced	Achieved
Development objective of the Program				
<i>Continue contributing to poverty reduction and the sustainable use of natural resources by consolidating the gains of Phase I in 75 communities in five municipalities of the South Atlantic Autonomous Region (RAAS)</i>				
Immediate objectives of the program and corresponding outputs				
<i>Increase the capacity of the Sustainable Agroforestry Center in Wawashang to generate and disseminate the appropriate techniques for natural resources management.</i>				
o Agricultural experimentation plots expanded		RT		
o Germplasm collections expanded.				RT
o Results published quarterly in a journal		RT		
o Results shared during field days			RT	
o Production of certified seed for perennial crops and forest species			RT	
o Management plan for Kahka Creek Natural Reserve developed and put in place				RT
o Infrastructure and equipment are in place for the optimum functioning of the Center				RT
o Technical staff has been hired and properly trained.			RT	
<i>Improve the capacity of the communities for sustainable production and management of the agroforestry systems within a framework of participatory action and gender equity.</i>				
o The agroforestry demonstration plots are consolidated on the promoters' farms				RT
o Agroforestry plots are monitored by the promoters and program staff to provide the communities with the information and knowledge		RT		
o Successful technologies disseminated through credit program			RT	
o Successful technologies disseminated through seed exchanges and field days			RT	
o Successful technologies disseminated through local environmental agendas		R	T	
o Management of plots by women has motivated the incorporation of new women to the Program				RT
o The model to create new knowledge on sustainable production in a participative manner and with gender equity has been consolidated.		RT		

	Not initiated	Initiated	Advanced	Achieved
<i>Contribute to territorial zoning and management of the local environmental agendas by the communities in order to improve the sustainable use of the natural resources and biodiversity conservation of the tropical rainforest.</i>				
o Each community has a territorial zoning plan jointly agreed by men and women of the community.			RT	
o There is a municipal environmental planning concept jointly developed by the program and local and regional governments		RT		
o The communities' local agendas allow for the production of environmental services and the improvement of the quality of life for the rural and urban population in terms of access to water, energy, tourism and forestry resources.			R	T
o An environmental education program is in place in each municipality		RT		
<i>Reduce poverty by means of increasing the coverage and self management of the credit system within the framework of territorial zoning and strengthening of local associations.</i>				
o From experience obtained in Phase I. a consolidated credit program is fully functioning.				RT
o Women's capacity in credit management has been strengthened through training and literacy programs. At least 50% of the women are beneficiaries of the training programs.				RT
o The income levels of 1,600 families, beneficiaries of the credit program, have been improved by activities compatible with environmental conservation.			RT	
o Half of the credits are channeled through local finance groups (Producer associations and non conventional financing intermediaries).	RT			
<i>Secure self-sustainability and multiply the positive effects through the institutional strengthening of the executing agency and other agencies involved in rural development.</i>				
o The efficiency and the level of specialization of the human resources of FADCANIC have been increased to optimize Project management				RT
o The capacity of FADCANIC has been increased to transfer experiences to other municipalities			R	T
o Publicity related to the success of the program has generated new collaboration			R	T
o Coordination with relevant governmental agencies has been established				RT
o Coordination with relevant governmental agencies has allowed gradual institutionalization and appropriation of the program by those agencies		RT		

4.2 Analysis of program achievements

4.2.1 Is the program well designed?

FADCANIC elaborated an original proposal for working in 110 communities of 6 municipalities, with 3000 farm households for five years. This proposal had a budget of 21 million NOK. An appraisal mission recommended the proposed program but with specific recommendations for improving the log frame, defining a commercialization strategy and developing external connections for research in the program. Later a revised proposal was submitted by FADCANIC to work in 88 communities in five municipalities with 2600 households over three years. This proposal had a budget of 9.0 million NOK and used the same log frame as the original proposal, modifying the number of beneficiaries and activities. This revised proposal was approved by the Norwegian Ministry of Foreign Affairs (MFA) and formed the base for collaboration between FADCANIC and Norway as Phase II of the Sustainable Agroforestry Development program.

Fitting a three-year program into a logical framework originally prepared for a five-year work program was an ambitious project. In our opinion, this has affected the quality of the outputs and many results may not be achievable as proposed in the log-frame within the duration of the program. If both parties are agreeable, we strongly recommend an extension of the actual program for an additional 1.5 years with new funds to help mitigate this problem.

We wonder if the program is too well defined, hence too rigid to accommodate new realities, new threats and new opportunities. We strongly suggest that while formulating new proposals, provisions for a part of the time of the team and some funds be left open to address new realities and new challenges that always appear during the implementation of the program, especially since the program operates under a participatory framework.

4.2.2 Is the program relevant for the beneficiaries?

During consultations all beneficiaries, members of the local authorities, representatives of public organizations and municipal governments indicated a high degree of relevance of the program for the participating actors, organizations, communities and the region.

However, to get a more profound understanding of the relevance of the program, we used the method of local indicators. During the focal group discussions with promoters, they were asked to identify a goal that will indicate the most important progress for their communities. These ideas were later consolidated to form a list of local indicators for rural development. As shown in the table on page 10, the analysis indicates a high degree of convergence between the program outputs and the local indicators for rural development. However, there are some very important local indicators that are addressed by the program only in a limited way or not addressed at all.

We strongly recommend that the local indicators be taken into account while formulating the next phase of work and that the methods of local indicators be used before, during and after the program implementation to get a better and continuous insight on the relevance of the program.

Local Indicators generated in focal group discussions	El Rama	Kukra Hill	Pearl Lagoon	Is the local indicator covered by program outputs?
Improved pastures, with legumes and trees	X	X		Yes, but limited
Availability of drinking water on the farms	X	X	X	Yes
Availability of electricity on the farms and in houses by implementing solar units: credit program for rural electrification			X	No
Improvement of the houses, better designed farm houses	X		X	Yes, but limited
Better roads and access to communities		X		No
Eradication of agricultural burning and conservation of forest trees			X	Yes, but limited
Improved food security by diversified plots and crops	X			Yes
Bigger and longer-term credit for working in animal husbandry	X	X		No, credit Yes, technical assistance
Eradication of illiteracy in the area covered by the project	X			Yes, but limited
More help including longer-term credit for timber plantations	X			No, credit Yes, technical assistance
Management of crop, animal and human residues on the farms	X			Yes, but limited
Availability of irrigation for growing crops in the dry season		X		No
Better organized farms with secure divisions using live fences		X		Yes, but limited
Improvement of the conditions of the local school and formal education for the children	X	X		Yes, in other FADCANIC projects
Improvement of community health, promotion of medicinal plants and emergency medicines and local hospitals	X	X	X	Yes, but limited
Improve the business capacity to sell farm commodities at higher prices by developing rural business enterprises	X	X	X	Yes, but progress has been slow due to long crop cycles
Search for new commodities with less volume and higher values that grow well in humid tropics	X			Yes, but limited due to long time requirement of research and validation
Better organization in the communities to be able to manage and participate in development project		X	X	Yes, but progress has been uneven and slow
Continuation of learning process accompanied by field technicians		X		Yes
Develop specialized poultry farms to supply the local population			X	No
Develop leadership quality of rural promoters so that they can catalyze local development processes			X	Yes, but limited

4.2.3 Is the program well managed?

A study of the program documentation and observation about the administrative and managerial systems indicates that during the program implementation an efficient internal routine of planning, implementation and reporting was carried out. It is evident that an internal routine of monitoring and follow up has also been put in place, with a detailed scheme of indicators for results and objectives.

Through observations of the numbers presented in the work plans and annual reports, we confirm that the use of funds for the different items has been in accordance with the program budget with the exception of the construction of municipal offices and internal travel due to increased gasoline prices from 2005. Audited financial reports also support our conclusion.

	Approved amount		Amount Spent	Amount Spent		Use of funds	Amount Remaining
	Start of the program	%	Till Dec 2005	Till Dec 2006	%	%	Jan till Sept 2007
Center for Sustainable Agroforestry	127444.00	10.0	127535.42	127690.89	12.0	100.2	-246.89
Municipal Offices and Associations	49600.00	3.9	59428.10	59428.10	5.6	119.8	-9828.10
Program staff	379890.00	29.9	153177.10	289287.52	27.3	76.2	90602.48
Training, education, communication	159250.00	12.5	67825.53	117301.07	11.1	73.7	41948.93
Research, production and commercialization	341395.00	26.8	143247.91	250751.02	23.6	73.4	90643.98
Operating costs	98890.00	7.8	72638.18	111957.62	10.6	113.2	-13067.62
Project administration	115646.00	9.1	62762.76	104107.00	9.8	90.0	11539.00
Total	1,272,115.00		686,615.00	1,060,523.22			211,591.78
	100.00		53.97	83.37			16.63

However, we believe that the internal monitoring routine can be improved so as to keep track of the indicators in both quantitative and qualitative terms and use the monitoring to adjust work plans for each semester. Currently at the end of each financial period a report (activities, results and financial execution) and a work plan is prepared and submitted to the donor. It is not clear if these reports are distributed among the other program stakeholders.

We suggest that this routine be continued with the modification that at the end of each financial period only *an activity report* (activities, financial execution, narratives on program execution) with very brief indication of results achieved be prepared and submitted to the donor along with the plan for the next financial period. However, we strongly recommend that these activities reports be complemented with an annual *results and impact report based on program indicators* so that the program staff, donor and the partners can conduct a public monitoring of the program achievements and learn from the processes of program implementation.

4.2.4 Is the program effective?

Effectiveness of the program is determined by timely achievement of the objectives and outputs. According to the results of the assessment of progress of the program objective (see table on pages 16 and 17), two of the immediate program objectives have advanced to the level of “Achieved” and the rest have reached the level of “Advanced” as of December 2006. In general, we can consider that this reflects a satisfactory degree of effectiveness for the program.

However, effectiveness of the program has another dimension which is related to the quality of the results. It is not very easy to determine the quality of outputs and objectives of a program unless specific indicators are put in place to monitor this aspect. The program developed and put in place a detailed evaluation system that can monitor the quality of the results. However, the information collected by the team regarding the quality of the program results was not completely processed or accessible at the time of the mid-term evaluation.

Hence, we used the information gathered during focal group discussions to analyze this issue. Self-evaluation of the *current status of agroforestry initiatives on the promoters’ farms* (page 22), indicated that some were qualified to have good or average stands (mixed tree stands, plantations of perennial crops, green manure, live fences) and others were qualified to have average or poor stands (timber plantation, reforestation of creeks and use of organic manure). This reflects that not all the agroforestry initiatives promoted by the program have had equal success in the field or are being put into practice by the promoters.

We also looked at the *number of farm households with agroforestry initiatives in the communities* as an indication of the dissemination of agroforestry and hence the effectiveness of the program. The results (page 22) showed that mixed tree stands and sheep were adopted by more farm households (an average of more than 3 farm households per community) followed by timber plantations, live fences and perennial crops plantations (an average of 2-3 farm households per community) and other initiatives were adopted by a lesser number of households (on an average of less than 1 household per community). These results show the difficulties that the program faces to achieve a dissemination of successful agroforestry initiatives through the communities and the region.

During the past five years, the promoters have received planting materials from the program free of charge and have had the benefit of technical assistance from the program to establish agroforestry initiatives on their farms. Many of the beneficiary farm households expect that now it is their turn to receive the same support in order to establish the agroforestry initiatives on their farms. But the program resources or program strategy do not contemplate free distribution of the planting materials or provision of mass technical assistance for all the participating households. The strategy contemplates the use of local planting materials and local networks to encourage the establishment of agroforestry systems on the farms. The program must focus on strengthening community organization and networking which will permit the farm households in the communities to receive planting materials from the promoters and to learn about how to establish agroforestry systems from the local experiences. The effectiveness of the program will finally depend on the success of local agroforestry networking.

Current state of agroforestry initiatives in promoters' farms indicating quality of the results

	Focal group El Rama											Kukra Hill Focal group										Peral Lagoon Focal group						Global
	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	Average	P1	P2	P3	P4	P5	P6	P7	P8	P9	Average	P1	P2	P3	P4	P5	Average	Average
Mixed tree stands	2	2	2	1	2	3	2	2	3	3	2.2	3	2	2	2	2	2	2	2	2	2.1	3	2	3	2	2	2.4	2.2
Timber plantations	2	2	3	2	3	2	3	2	2	2	2.3	0	2	2	0	2	3	0	0	0	1.0	3	0	2	0	0	1.0	1.5
Reforestation of creeks	3	3	3	2	3	3	2	2	1	2	2.4	3	1	1	0	0	3	1	2	2	1.4	0	0	0	0	0	0.0	1.5
Live fences	3	3	2	1	3	1	2	2	1	3	2.1	0	3	1	0	3	3	0	2	2	1.6	0	2	2	3	3	2.0	1.9
Perennial crop plantations	3	3	2	2	3	3	3	2	3	3	2.7	1	2	3	3	3	3	1	2	2	2.2	0	2	3	3	3	2.2	2.4
Use of green manure	0	2	0	0	0	1	2	0	0	2	0.7	3	3	3	3	3	3	1	3	3	2.8	3	3	3	3	3	3.0	2.0
Use of organic manure	0	2	0	0	0	2	1	0	1	2	0.8	0	0	0	0	0	3	2	2	2	1.0	0	0	3	0	3	1.2	1.0
Sheep	2	3	2	2	2	2	0	0	3	3	1.9	3	2	3	3	0	3	3	3	3	2.6	0	0	3	3	3	1.8	2.1

(Self-evaluation scale: 0 = do not exist, 1 = poor, 2 = average, 3= good)

Number of farm households with agroforestry stands in the communities indicating dissemination of initiatives

	El Rama Focal Group											Kukra Hill Focal Group											Global
	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	Average	C1	C2	C3	C4	C5	C6	C7	C8	C9	Average	Average	
Mixed tree stands	1	1	0	1	2	2	2	2	0	0	1.1	20	0	5	2	2	6	2	5	4	5.1	3.0	
Timber plantations	0	3	4	5	3	2	4	2	2	0	2.5	0	0	1	1	0	9	1	2	0	1.6	2.1	
Reforestation of creeks	0	1	0	0	3	0	2	0	1	1	0.8	0	0	0	0	0	6	0	0	0	0.7	0.7	
Live fences	0	3	4	0	5	3	3	4	0	9	3.1	0	0	1	1	1	9	1	3	4	2.2	2.7	
Perennial crop plantations	0	4	3	1	2	2	4	3	3	5	2.7	0	0	0	3	0	9	0	6	3	2.3	2.5	
Use green manure	0	4	0	0	0	0	2	0	0	0	0.6	0	2	0	0	0	7	0	3	0	1.3	0.9	
Use of organic manure	0	0	2	1	3	0	3	0	0	0	0.9	0	0	0	0	0	0	0	0	0	0.0	0.5	
Sheep	4	10	3	1	1	5	5	1	0	10	4	8	5	0	0	0	4	0	4	4	2.8	3.4	

4.2.5 Is the program efficient?

Being efficient means achieving outputs at a lower cost through synergies and optimization of program activities. Data requirements for estimating program efficiency are complex when program activities generate direct benefits for the participants and also generate public goods and services (like improved seed, technology and mass rural education). However, we have made some preliminary assumptions about beneficiaries and services under optimistic and pessimistic scenarios, and have calculated the cost/beneficiary for different components of the program (see table below).

		<i>Optimistic scenario</i>		<i>Pessimistic scenario</i>	
	<i>Total use of funds US \$</i>	<i>Estimated number of beneficiaries</i>	<i>Cost/ beneficiary</i>	<i>Estimated number of beneficiaries</i>	<i>Cost/ beneficiary</i>
<i>Objective 1: Generation and dissemination of technology at the Wawashang Center</i>	248567	1800	138.09	1300	191.21
<i>Objective 2: Capacity for natural resource management by communities</i>	108658	800	135.82	720	150.91
<i>Objective 3: Territorial zoning and management plan by watersheds</i>	74013	800	92.52	720	102.80
<i>Objective 4: Credit system and adult education</i>	267447	1600	167.15	1200	222.87
<i>Objective 5: Organizational strengthening and phasing-in</i>	209820	2800	74.94	2000	104.91
<i>Salaries</i>	326315	2800	116.54	2000	163.16
<i>Project management</i>	123482	2800	44.10	2000	61.74
<i>FADCANIC contribution</i>	180000	2800	64.29	2000	90.00
<i>Overall cost/beneficiary</i>			833.45		1087.60

Under an *optimistic scenario* direct beneficiaries of the program include 160 promoters, 800 farm households in the local environmental agenda and 1600 farm households in credit and adult education. In addition the program generates goods, services and knowledge that can indirectly benefit another 1000 beneficiaries over three years. The average program investment under this scenario per beneficiary is around US \$ 840 for three years. Under a *pessimistic scenario* direct beneficiaries of the program include 160 promoters, 540 farm households in the local environmental agenda and 1200 farm households in credit and adult education. In addition the program generates goods, services and knowledge that can indirectly benefit another 700 beneficiaries. The average program investment under this scenario per beneficiary is around US \$ 1087 for three years. These numbers indicate a satisfactory level of economic efficiency of the program relative to other programs in the country (for example World Bank estimates the cost to train a farm household to be around \$200/year to be efficient, recently formulated national program HAMBRE CERO advocates investment of \$2000 per family).

The program investment includes capacity building, territorial planning, direct investment in improvement of environmental services on the farms, agroforestry promotion and creating a local knowledge base and regional capacity. Considering the whole range of impacts that the program hopes to achieve, we believe that the program investment per beneficiary, especially for the component of capacity building of the communities and territorial planning, is low, and this may possibly affect the quality of the results in the long-run.

4.2.6 Are the program advances sustainable?

In our opinion, sustainability of the program advances will stem from the networks of actors and organizations that will continue to pursue the present and future goals of promoting sustainable agroforestry with the organized farm households in different communities of the Atlantic region of Nicaragua. FADCANIC as one of the leader organizations should continue to form strategic learning alliances with other actors from public and private sectors to create synergies and develop innovative paradigms to move the process forward.

Sustainability of the program achievements will critically depend on:

- *Capacity of FADCANIC to scale out the program experiences*
- *Capacity of the agroforestry networks in the communities across the region*
- *Economic returns from the agroforestry initiatives on the farms.*

The findings of this mission lead us to conclude that FADCANIC has developed a very strong capacity to promote agroforestry with participation and gender equity as a gateway to sustainable rural development. The capacity built on its experiences in technical, methodological and organizational aspects has positioned FADCANIC as a leader organization in the Atlantic region for wide-scale implementation of sustainable agroforestry throughout the region. The Sustainable Agroforestry Center in Wawashang, the Agroforestry School in Wawashang, municipal offices and networks in the communities are part and parcel of the capacity of the region to sustain efforts of agroforestry implementation in the coming years and decades.

On the other hand, we also conclude that in spite of many years of persistent and systematic work carried out by FADCANIC in the communities, the capacity of the agroforestry networks in the communities is relatively weak and forms the most fragile part of the system. There is an immediate need to think strategically of how to go about strengthening the capacity of the actors and community organizations so that they can sustain agroforestry implementation processes in the communities.

The past two phases of the sustainable agroforestry program have shown clearly how to achieve food security through agroforestry initiatives (mixed tree stands and small animals). However, work has just begun in the areas of commercial agroforestry (perennial crop plantations) and environmental services of agroforestry systems (silvopastoral systems, reforestation of creeks and enrichment of forest patches and natural reserves). Will agroforestry systems generate enough work and income to fuel the local development process? Will the systems be capable of generating enough profit to compensate the lost income from the diminishing fish catches? Will they provide rewarding environmental services? We do not know the answers of these questions yet. Experiences from other parts of the world and the local wisdom indicate that FADCANIC and the organized rural families may have made the right decision to try the agroforestry initiatives as valid alternatives for rural development in the humid tropics of Nicaragua. Only time will tell if such initiatives will take root in the communities or if the Atlantic region of Nicaragua will be converted to a green desert of African palm monoculture dedicated to corporate production of bio-fuels.

4.2.7 What is the current state of the implementation of a gender focus?

At the beginning of the first phase the baseline situations of the communities were elaborated through participatory diagnostics with a gender focus which helped FADCANIC to visualize and document clearly the situation of women in the program areas.

While selecting promoters for their communities, the beneficiaries were specifically oriented by FADCANIC to elect at least one male and one female member. This policy initially resulted in 50% participation of women as promoters of the agroforestry program. Later, in some communities the male promoters abandoned their role of promoters, leaving only the women to carry out the responsibilities. In other communities the project beneficiaries elected three promoters, two of them being women. These actions lead to further increasing women's participation as community promoters.

The program strategy to implement agroforestry systems on the farms has focused principally on introduction of trees and crops that produce food. The successful establishment of mixed tree stands and perennial crop plantations has resulted in improved food security for the households, a response to the principal concern of women. The introduction of small animals in the farms has also helped the women to guarantee better nutrition for their families through consumption of eggs, chicken, pork and meat from sheep all raised on grains or root crops grown on the farm. Excess production from the small animals has also come in handy to generate income for the women and their families.

Currently, close to 50% of credit users within the program are women. Being credit users they can also access the adult education program and currently make up the better part of the students. This reflects clear progress of gender equity through access to education in their communities and access to funds for introducing new crops or animals on their farms. In most of the communities the local environmental agendas have also focused on primary needs of the families and especially the women on firewood gathering, smokeless stoves and a clean drinking water supply. By responding to these concerns, the program not only has taken into account the needs of the women, but also has put the resources in the right place to meet these demands.

In the words of the president of FADCANIC, *"We hope that women in the communities are now becoming a source of knowledge and power for their families and their children in addition to being the primary source of food and love."* This reflects a very practical way to understand and implement gender equity. The results of the focal group discussions (see page 26) show that gender equity has advanced significantly through sharing of knowledge and income within the families. However, in many communities more work is needed to improve the situation of sharing of power between men and women in the house and the communities which affect the decision-making processes. Much more work is definitely needed to eradicate violence in the families. This is being attended through another complimentary program of the FADCANIC.

To further build up on the significant advances that the program has already made in this area, more strategic thinking must now go into figuring out: *How can we consolidate these goals for the younger generation? How can we sufficiently improve women's income through rural enterprises and business development? How can we phase in these advances into regional development strategies and plans?*

Progress in gender equity in the communities: results from discussions in focal groups

	El Rama											Kukra Hill										Pearl Lagoon						Global
	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	Average	C1	C2	C3	C4	C5	C6	C7	C8	C9	Average	C1	C2	C3	C4	C5	Average	Average
Household knowledge shared by man and woman	2	2	2	2	2	2	2	2	2	3	2.1	1	2	2	2	3	2	2	2	3	2.1	2	2	3	3	2	2.4	2.2
Household income shared and managed by man and woman	2	2	2	2	2	2	2	2	2	3	2.1	1	2	3	3	3	2	2	3	3	2.4	2	2	3	2	2	2.2	2.3
Both man and woman yield equal power within the home	2	2	2	2	2	2	2	2	2	2	2	1	1	2	2	2	1	3	3	3	2.0	1	2	3	3	2	2.2	2.0
Both man and woman yield equal power in the community	1	2	2	1	1	1	2	2	1	2	1.5	2	2	2	3	3	2	3	3	3	2.6	2	2	2	2	2	2	2.2
There is no violence in the household	1	1	1	1	1	1	1	1	1	2	1.1	2	2	3	3	2	2	3	3	3	2.6	1	1	2	2	1	1.4	1.9

(Self-evaluation on the current state of affairs in the communities using a qualitative scale of 0, 1, 2 and 3, representing 0= critical situation, 1 = bad situation, 2 = situation is improving, 3 = situation has improved to a satisfactory level)

4.2.8 What is the current state of implementation of the environmental focus?

The program strategy for implementation of the environmental focus in all the components implied that:

1. Participatory territorial zoning for sustainable land management and of other natural resources are generated with a wide range of stakeholders in all the communities and micro watersheds covered by the program.
2. Territorial zoning is then used by the program and the participating stakeholders as a guide to carry out detailed planning process at the farm and community level to guarantee sustainable management of land and other natural resources throughout the micro watershed.

To implement this strategy, participatory territorial zoning of the micro watersheds had to be developed during the early stage of the program. These territorial zoning agreements with community ownership and support for the wide range of stakeholders would then have served as a base for developing local environmental agendas, credit policies and municipal environmental education programs. In practice, the territorial planning process has taken much longer than expected as the program has tried to cover 88 watersheds and the human resources of the program have been stretched to their limits in this process. After two years of program implementation, territorial plans are still being finalized and presented to the municipalities. Meanwhile credit and the local environmental agendas and the environmental education components of the program had to continue with their activities without having a formal link to the territorial zoning agreements.

In spite of this distortion in the sequence of implementation of the environmental focus, we conclude that conservation of natural resources has been a cross-cutting theme in the conscience of the program and its stakeholders during all the discussions and decision making. We consider that significant progress has been made in this aspect through a wide range of creative program initiatives like agroforestry plots, territorial planning, local environmental agendas, environmental education for adults and development of management plans for a natural reserve. The extent of agricultural burning has also reduced significantly in the project areas over the last few years.

Presently more strategic thinking must go into some of the critical questions like:

- *What effect will monoculture of commercial perennial crops (coconut, musaceas, and Pejibeye palm) have on biodiversity, nutrient cycling and carbon sequestration in the humid tropics?*
- *Can the Kahka Creek Natural Reserve become a school for the rest of the region to learn about managing and making a living from natural reserves?*
- *When will it be the right time for the program to start working with the communities in the area of rational use of forest resources (timber and other secondary products)? Or is that a taboo?*
- *How can territorial zoning be phased into micro watershed and municipal planning so as to guarantee sustainable use of land and other natural resources in the region?*

4.2.9 What is the current state of the ethnic focus?

Working with the ethnic groups is a fundamental part of the mission, vision and organizational strategy of FADCANIC and we conclude that significant advances have been made by working with ethnic groups in the project areas.

Special mention must be made for the work carried out in the development and putting in place of a management plan for the Kahka Creek Natural Reserve, part of indigenous land owned by the Tasba Pawni community.

Development of territorial zoning and management plans of the Smaya Creek Natural Reserve by resolving land use conflicts between indigenous and *mestizo* groups have created a benchmark of the negotiation process in the region

However we still need to address the following issues to improve the implementation of an ethnic focus in this and future FADCANIC programs:

- *Is there a marginalization of ethnic communities in the current credit program? Are they victims of the history of paternalistic and poorly managed past credit programs?*
- *Isn't there an urgent need to understand the typology of program beneficiaries so as to take into account ethnic diversities and adjust program actions in different communities according to their Cosmo visions and livelihood strategies?*
- *Taking into consideration the community land tenure and natural resource access tradition in the ethnic groups and communities, do we need to start working out strategies for community forestry initiatives which will permit sustainable harvesting and certifying and commercializing of timber or other forest products?*
- *How are we going to handle the theme of MESTIZACION of indigenous people and communities now that fishing is not very attractive and more and more indigenous families will turn to land for their food security and livelihood?*
- *Is the land demarcation process an opportunity for implementing territorial plans? How shall we join hands and work with the land demarcation process for putting in place better land use plans for the ethnic communities?*

4.3 Assessment of fulfillment of program obligations by FADCANIC

Terms of reference for the mid-term review specifically ask the reviewer to pay attention to the results included in the section 4.5, 4.6, 4.7, 4.8, 4.9 and 4.10 of section 4 "Obligations of FADCANIC" in the contract signed between FADCANIC and the Norwegian Ministry of Foreign Affairs on 29.09.04. The following section deals with these results.

Section 4.5

Section 4.5 mentions that FADCANIC must update the program baseline by January 30, 2005 and inform the MFA about it. In an annual meeting between FADCANIC and MFA, it was agreed that the baseline situation of the program will only contain information regarding the situation of the participating farm households.

Program staff mentioned that a survey was conducted in 2004 to collect data for the study on families, their production practices, income and commercialization of the farm produce. These data were introduced into a data base, but were not processed. They expect to finish processing the data collected in 2004 before the program ends in September 2007. A systematization of Phase I experiences was carried out in 2004 and the information from this study can also contribute to consolidating the program baseline for 2004. A fresh round of data and information about the promoters and other program beneficiaries is being collected in 2007. This will be incorporated into the data base and will be used to assess the advances made in these farm households during Phase II of the program.

We conclude that this obligation was not fulfilled on time. According to the program team, lack of specialized technical capabilities, lack of time on the part of the team and the separation of operating units within FADCANIC about who manages the data and who analyzes and uses it, are some of the reasons why the baseline was not completed within the stipulated time. We had a chance to look at the data base and some of the records from the surveys of 2004 and 2007. Although many of the records collected in 2004 and 2007 are not complete, we believe that there is enough information to complete the baseline situation of 2004 and determine the salient changes that have occurred during Phase II. We recommend that this be handled as a high priority theme since without the 2004 program baseline, it will be impossible to assess program achievements in 2007. During this mid-term review we felt that this gap and the final review will again face this difficulty.

Section 4.6

Section 4.6 mentions that FADCANIC must prepare a commercialization strategy for the products that will be generated by farm households through program activities.

During 2003-2004 FADCANIC conducted a study through a consultant on "Strategies for commercialization of agricultural and animal husbandry products generated by the program beneficiaries in five municipalities covered by the Sustainable Agroforestry program including business organization, management, marketing and quality of products." This study generated information regarding, market windows and niches, consumer opinion, a technical proposal for organization for promotion and commercialization in local markets, a proposal for organization of farmers in business networks and a proposal for empowering program beneficiaries.

We believe that with the generation of information in this study, FADCANIC fulfilled this obligation. However, during our visits to the communities, both field technicians and participating farm households expressed their worries about how to commercialize the products and get a better prices for them. Thus, we wonder if the content of the study has been sufficiently discussed with the communities to define a coherent commercialization strategy. We recommend that FADCANIC look into this issue and if there is a need, summarize the principal lessons from the study into a popular document to benefit farm households.

Section 4.7

Section 4.7 mentions that FADCANIC must exercise sufficient caution when introducing new species that may damage the environment and native species

According to the program team, FADCANIC works principally with native species in all the components of the program. In the case of forest and fruit trees, all the species are appropriate for humid tropics and none of the species have been introduced from the dry tropics.

We consider that in general, FADCANIC has exercised sufficient caution while introducing new species in the region. However, we would like to mention the case of tilapia fish which we observed in rearing tanks in one of the communities in El Rama, part of the local environmental agenda supported by the program. The rearing tanks were situated close to natural bodies of water and the fish could easily escape and damage the native river and rivulet ecosystem. We also observed plantains affected by black weevil and nematodes in all the communities. Plantain seed material was brought in from the Pacific coast of Nicaragua by FADCANIC and could have carried infectious insects and nematodes. We strongly recommend that FADCANIC use all its capacity and judgment to prevent any damage that may occur to the environment and native species through introduction of new species and pests.

Section 4.8

Section 4.8 states that FADCANIC must look for strategic alliances with the Ministry of Agriculture and Forestry (MAGFOR) and the Ministry of Environment and Natural Resources (MARENA) to ensure that the processes and results of the program are included in public policies related to development of sustainable agroforestry initiatives in the region.

From the study of the documentation of the program and interviews with representatives of the public organizations in the region, we have concluded that FADCANIC has fulfilled this obligation by developing a strategic and long-term relationship with the public sector. Public organizations are very well informed about the progress of the program and there are ample opportunities for phasing in program lessons into regional development plans.

Section 4.9

Section 4.9 mentions that FADCANIC must prepare a strategic plan to manage the Agroforestry Center in Wawashang by mid-2005.

We confirm that a strategic management plan for the different areas of the Agroforestry Center was prepared by the program team aided by a consultant by mid-2005. The Center's strategic plan has practical elements that have helped FADCANIC to develop effective yearly work plans and achieve satisfactory results for the Center.

Section 4.10

Section 4.10 indicates that FADCANIC must continue implementing a gender equity policy.

As described in the gender section (page 25), we confirm that FADCANIC has continued to implement a gender equity policy in all the components of the program. The implementation of this policy has resulted in very satisfactory levels of progress in gender equity in the beneficiary households of the program.

5. Recommendations of the mission

5.1 Critical tasks between now and September 2007

In order to advance the program objectives further and create conditions for sustainability of the program achievements, we recommend that the program focus on the following tasks:

1. *Immediately set up a work routine to process the information gathered during the 2004 information survey of farm households and prepares a report on the baseline situation of the program. Improve the data collection protocol for the survey being carried out in 2007 and ensure that the information is processed on time so that by the end of the program one can compare the changes that occurred in the farm households and assess program impacts*
2. *Accelerate the process leading to certification of seed production in the Agroforestry Center. Improve protocols and procedures of quality control to assure total quality and prevent spread of pests and pathogens through planting materials. Improve the transport regime of the planting materials to the communities so that seeds and planting materials reach the users in better condition*
3. *Determine cost-benefit relations of the agroforestry systems and develop model investment and business plans for the promising products (coconut, cocoa, musaceas, and cinnamon) based on local, national and international markets, taking into account information already generated by the study related to a commercialization strategy for program beneficiaries.*
4. *Strengthen work routines in selected communities (25) with a new vision of community sustainability. Agroforestry networks involving promoters, community committees, knowledge harvesting and sharing routines carried out by community members supported by FADCANIC. This will help identify the steps to scale up work in the future.*
5. *Finish elaborating the territorial organization by micro-watershed (30) and develop precise management plans for the watersheds. Develop a process to enhance community ownership of the plans and initiate negotiations with municipalities to include the results in their development plans*
6. *Determine economic and environmental impacts of the credit program (at least 40 cases) and feasibility of managing local credit systems by women's groups in the communities (3 cases)*
7. *Organize an internal process to identify the principal program lessons and finish a set of critical publications (paper and electronic) to summarize program results in popular format. If possible, use of program resources to outsource part of this work load, especially related to edition and publication of documents*
8. *Design and carry out a high-profile campaign to make the results of the program available to a wide range of audiences and lead a process with high-level political and social leaders of the region in order to include the program lessons in future development plans. If possible, use professional help to design the campaign to guarantee effectiveness of the same.*

5.2 A consolidation phase between October 2007 and December 2008

In order to guarantee that the program achieves all of its planned objectives and that program lessons are available for a future program of wide-scale implementation of sustainable agroforestry across the region, we recommend that FADCANIC and the Norwegian Ministry of Foreign Affairs discuss possibilities for additional funding to continue the program through December 2008. We recommend that the program focus on the following tasks during this period.

- 1. Continue high profile campaigns about sustainable agroforestry models for the development of the Atlantic coast of Nicaragua based on Phase I and Phase II program results*
- 2. Consolidate, systematize and publish documents related to methods developed during Phases I and II of the Program to benefit a wide range of actors who will be involved in the wide- scale implementation of sustainable agroforestry initiatives in the Atlantic regions*
- 3. Strengthen work routines in selected communities (25) with a new vision of sustainability of the community Agroforestry networks involving: promoters, community committees, knowledge harvesting and sharing routines carried out by community members supported by FADCANIC. This will help identify the steps for scaling-up the work in the future.*
- 4. Finish elaborating the territorial organization by micro-watershed (88) and develop precise management plans for the watersheds. Develop a process to enhance community ownership of the plans and initiate negotiations with municipalities to include the results in their development plans*
- 5. Determine the feasibility of managing local credit systems by local women's groups and farm household organizations in the communities (10 cases)*
- 6. Follow-up on the Hurricane Beta rehabilitation project with an intense work plan to implement agroforestry systems and management of forest resources based on participation and gender equity in the municipality of Desembocadura de Rio Grande with 200 families (catching up with the rest of the municipalities attended by the program)*
- 7. Carry out baseline studies with a focus on innovation, rural business and local development, based on agroforestry, forest management and natural resource conservation, equity and participation in the future project scenarios to assess the current status and develop future strategies*
- 8. Introduce the theme of independent forest resource monitoring (Global Witness) and help create local capacity for the same purpose, working closely with indigenous communities*
- 9. Strengthen adult education programs in the communities and generate improved learning resources as the existing resources are very poor and of limited use in the region*
- 10. Put in place the regional agroforestry research network with the participation of communities, Wawashang school, universities and international centers (CIFOR, ICRAF, CATIE)*

5.3 A future program of wide-scale implementation of sustainable agroforestry for income generation of farm households based on participation and gender equity 2008-2013

In the earlier sections we stated that FADCANIC has developed a very strong capacity to promote agroforestry with participation and gender equity as a gateway to sustainable rural development. The capacity has positioned FADCANIC as a leader organization in the Atlantic region for wide-scale implementation of sustainable agroforestry across the region. The Sustainable Agroforestry Center in Wawashang, the Agroforestry School in Wawashang, the municipal offices and the networks in the communities are part and parcel of this capacity.

On the other hand, we have also concluded that in spite of many years of persistent and systematic work carried out by FADCANIC and many other organizations in the communities, the capacity of the agroforestry networks in the communities is relatively weak and constitutes the most fragile part of the system. There is an immediate need to think strategically about how to strengthen the capacity of the actors and community organizations so that they can sustain agroforestry implementation processes in the communities.

We have presented the idea that sustainable agroforestry implementation is in its very early stages. There is clear evidence on how to achieve food security through agroforestry initiatives. However, work has just begun in the areas of commercial agroforestry and environmental services of agroforestry systems. Can the agroforestry systems generate enough work to fuel the local development process? Can the systems generate enough profit and significant environmental services? We do not know the answers to these questions yet.

Experiences from other parts of the world and the local wisdom indicate that FADCANIC and the organized rural families may have made the right decision to try the agroforestry initiatives as valid alternatives for rural development in the humid tropics of Nicaragua, but we must continue to work so as to convert this noble idea into a development paradigm rooted in the communities and people in the autonomous regions of Nicaragua.

This idea also coincides with the regional strategy of development cooperation of the Norwegian Ministry of Foreign Affairs as it offers the possibility of working on different challenges like poverty reduction, conservation of natural resources, promotion of gender equity and economic development of indigenous people.

Hence, we strongly recommend that FADCANIC and the Norwegian Ministry of Foreign Affairs engage in an urgent dialogue to explore the possibilities of continuing to cooperate towards a future program of wide-scale implementation of sustainable agroforestry in the region. The new program, based on the lessons of the past programs, must innovate new ideas and pathways in order to make sustainable agroforestry a key element in the development of farm households in the humid tropics of Nicaragua.

As the current program comes to an end in September, 2007, we recommend that negotiations regarding future cooperation be initiated immediately.

