MIDTERM REVIEW OF THE NATIONAL INTEGRATED PEST MANAGEMENT PROGRAMME IN NEPAL, PHASE II

BY KJELL B. ESSER, MAY-GURI SÆTHRE, NEELAM PRADHANANGA AND HEMANT OJHA

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ACRONYMS AND ABBREVIATIONS

ADB	Asian Development Bank
ADO	Agriculture Development Officer
APP	Agricultural Perspective Plan
ASC	Agricultural Service Centre
CADP	Commercial Agriculture Development Project
CEAPRED	Center for Environmental and Agricultural Policy Research, Extension and Development
CTEVT	Council for Technical Education and Vocational Training
DADO	District Agriculture Development Office
DCC	District Coordination Committee
DDC	District Development Committee
DLS	Directorate for Livestock Services
DoA	Department of Agriculture
FAO	Food and Agricultural Organization of the United Nations
FFS	Farmer field school
GAFSP	Global Agriculture and Food Security Program
GDP	Gross Domestic Product
GO	Government organisation
GoN	Government of Nepal
HICAST	Himalayan College of Agricultural Sciences and Technology
IAAS	Institute of Agriculture and Animal Science
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IFAD	International Fund for Agricultural Development
INGO	International non-governmental organisation
IPM	Integrated pest management
JT	Junior technician
JTA	Junior technical assistant
M&E	Monitoring and evaluation
MoAC	Ministry of Agriculture and Cooperative
NARC	Nepal Agricultural Research Council
NARDF	National Agriculture Research and Development Fund
NASDP	National Agriculture Sector Development Priority
NCC	National Coordination Committee
NGO	Non-governmental organisation
PACT	Project for Agriculture Commercialization and Trade
PPD	Plant Protection Directorate
PPO	Plant Protection Officer
RCC	Regional Coordination Committee
SSMP	Sustainable Soil Management Programme
TCP	Technical cooperation programme
TOF	Trainer of farmers
TOR	Terms of Reference
USAID	United States Agency for International Development
USD	US dollar
VDC	Village Development Committee
WOCAN	Women Organizing for Change in Agriculture & NRM

1. EXECUTIVE SUMMARY

The purpose of the midterm review has been to assess the programme performance against its target and to suggest potentials corrective measures for the rest of the programme period.

The evaluation team has assessed the programme in the context of its history, current political and administrative circumstances, recent developments in integrated pest management, and current situation in agricultural aid to Nepal. The evaluation was guided by the specific terms of reference and the programme's logical framework. The ToR states that the review shall, in particular, assess the progress of the immediate objective of institutionalisation within the five areas (i) coordinating institutions, (ii) research institutions, (iii) education, (iv) support services, and (v) farmer groups and farmer institutions.

The evaluation team finds that the design of the programme remains relevant despite changing contexts. The implementation is going well and progress is satisfactory. Although the number of farmers reached directly by the programme might appear relatively low (10,000), the programme has had a broader impact through assisting the work of other government projects, NGOs and farmer-to-farmer communication. Exact quantification of impact is, therefore, not possible.

The evaluation team has not detected any failings regarding agreement compliance, adherence to plans or financial management.

The interest in integrated pest management among stakeholders (farmers, government officials, international aid agencies and national as well as international non-governmental organisations) is high and increasing. Beyond doubt, the National IPM Programme in Nepal is a well-managed operation with significant achievements. Its services are in demand by the public, the government and the international donor community. By supporting the IPM programme, Norway has earned recognition among donor agencies in the field of food security, food safety and rural development in Nepal.

The programme appears to have incorporated all recommendations given by the 2006 Midterm Review and the 2007 Appraisal Report as well as followed up the objectives and concerns described in the 2009 Inception Report.

The programme has shown remarkable success in the field even in the time of unrest. In fact, the IPM programme has been among the few development programmes that have been able to operate in certain rural areas of Nepal at the time of insurgence. The ability to function under these conditions relates to the coinciding objectives of the programme and the rural social movements demanding inclusion, economic access and agricultural services.

The process of institutionalisation of IPM is moving forward according to the logframe. This does not mean that the job will be done at the end of the project period in 2013, but rather that the process is satisfactory given the economic and political situation in Nepal and the size of the available funds. To become a fully capable, sustainable government institution, the Plant Protection Directorate (PPD) would need to expand its staff of permanent employees. Future expansion of the programme would most likely benefit from placing a greater coordination role with the Department of Agriculture in order to stimulate all line agencies to participate in the development and implementation of IPM in the country. By lifting the level of coordination, research and education institutions may become formal partners in the

programme. Lately, some of the university departments and colleges for vocational training have already shown great enthusiasm in improving their courses in IPM. Within the next few years, their graduates will be available for employment in the districts, which again will reduce the needs for staff training by the programme. So far, training of staff in the districts has absorbed a significant part of the programme budget. As more educated staff become available, the programme may channel more of its funds towards action research, training and organising farmers.

The programme has developed new knowledge regarding farmer organisation and arrangement of farmer field schools. The field school arrangement has invigorated farmer groups, who have become better aware of economic possibilities and opportunities for advancing their rights through associations and federations. It is probably fair to conclude that the programme is among the world leaders in this respect and can offer valuable advice to other projects – not only in IPM, but in other aspects of rural development as well.

During the organisation of farmers, the IPM programme staff has observed that successful adoption of IPM depends on a range of personal and social factors, such as self-confidence by farmers to step forward and express their needs, courage to get involved in groups with diverse individuals, marketing skills to sell IPM products, organisational skills, bookkeeping skills, etc. The IPM programme has, therefore, expanded its scope to assist farmers with all these issues. Doing so is clearly beneficial for farmers and their ability to fit IPM into their broader reality of farming. On the other hand, expanding the thematic scope leads to more funds and time being invested in each farmer and each farmer group, and thereby diluting the investment in IPM as well as slowing down the progression towards full IPM coverage of all farmers in Nepal. With a limited funding, the IPM programme is clearly facing a dilemma of quantity versus quality.

A solution to this dilemma would be to partner with one or more of the existing and planned investment projects in agriculture and rural development. Through collaboration, the IPM programme could maintain its focus on field training of farmers while partner projects could assist in various supplementary investments, such as marketing, savings-and-loan schemes, irrigation infrastructure, roads, etc. The most relevant partners would be Commercial Agriculture Development Project (CADP, funded by ADB), Project for Agriculture Commercialization and Trade (PACT, funded by the World Bank) and Nepal Economic, Agriculture and Trade (NEAT, funded by USAID). In addition, new projects that will start in 2012/13 may also offer partner options, i.e., Nepal Food Security Enhancement Project (funded by the Global Agriculture and Food Security Program Trust Fund), Food Security Investment Programme (funded by ADB), and the Accelerated Agricultural Growth and Productivity Programme (supported by IFAD). The District Development Committees and the District Agricultural Development Offices would most likely be suitable coordinating bodies for inputs from the IPM programme and from one or more of the investment projects in accordance with national IPM and development policies.

The IPM programme and potential partner programmes will need to find a joint agenda and determine how common goals can be practically implemented.

The programme needs specifically to be supplemented by partner programmes on the establishment of commercial IPM value chains. Cooperation with partner programmes to support farmers and private entrepreneurs in obtaining and processing input materials for

biobotanicals, biopesticides and biofertilizers as well as support to commercialization of biopesticide production would be desirable.

With supplemental funding from partner programmes, the IPM programme can focus its attention on scaling up farmer training. First priority should be given to farmers in vegetable producing areas near large cities where the demand for IPM products is already high as well as farmers producing crops for export (tea and fruit). The second priority should be farmers in the non-intensive districts, through existing government funding that is already allocated to the District Development Committees.

In light of the challenges faced by the new government of Nepal in terms of peace building and financial constraints, the review team finds continued support beyond the second phase of the IPM programme to be commendable. The government has shown commitment to incorporate IPM in its policies as well as supporting the programme financially. Without continued external funding, the IPM programme may not be able to continue its positive development.

2. PURPOSE OF REVIEW

The purpose of the midterm review has been to i) assess the programme performance against the target, and ii) provide a foundation for possible corrective measures for the remaining programme period.

The review assesses in particular the progress of the immediate objective of institutionalisation in the following five areas: coordinating institutions, research institutions, education institutions, support service institutions and farmer groups and farmer institutions. The review considers how the IPM programme takes into consideration the challenges related to the ongoing political changes taking place in Nepal, with reference to the needs for a more inclusive society for all Nepalese people and development of stronger local communities.

Issues addressed in the 2005 Midterm Review of IPM Phase I, the 2007 Appraisal Report of IPM Phase II, and the 2009 Inception Report have been assessed.

The evaluation team consisted of four members: an environment and development specialist, an integrated pest management specialist, an indigenous knowledge and science policy analyst and a governance specialist. The team spent three weeks in Nepal collecting information about the programme in February 2012.

3. INTRODUCTION TO THE PROGRAMME AND ITS ENVIRONMENT

The National Integrated Pest Management Programme in Nepal has been supported by Norway since 2003. The programme aims at providing farmers with methods for ecologically sound pest control to reduce loss of food, eliminate pesticide poisoning of farmers and consumers and to prevent ecological disturbance of plants and animals.

Phase I of the programme was implemented from 2003 to 2007. It was followed by Phase II with a time span from 2008 to 2013.

3.1. POLITICAL AND ADMINISTRATIVE ENVIRONMENT

The political instability of the past decade was largely rooted in the extreme socio-economic inequality[1]. Informal and patron-client relations prevail, leading to corruption and lack of accountability in political institutions[2]. Poverty still remains a major issue despite some decline in the percentage of people living in abject poverty over the past decade. Over the past several years, disadvantaged groups of people have aired their discontent through diverse social movements and yet, people complain that their voices are not being adequately translated into state restructuring processes and development activities. Meanwhile, increasing concerns for climate vulnerability has further complicated development planning and processes of equitable management of natural resources. In such situations, Nepal's international development partners are facing a challenge to balance their support to help improve the livelihoods of the poor while also contributing to the larger process of inclusive governance reform.

The administrative structure of the country is highly centralized. An assessment from 2008 reported that several administrative review commissions and restructuring attempts have been made before and after the 1990 political change, but no major change has happened[3]. Decentralization received major impetus in 1982 (during *Panchayt* era) through a new law. The agenda was advanced further in the post-1990 democratic environment. Local Self Governance Act 1999 empowered local governments that demonstrated good performance when elected bodies were in place (till 2006), but the political unrest of the past decade created vacuum in these bodies. After the last elected officials completed their tenure, these local bodies have been filled by ad hoc administrative or political mechanisms, creating problems in accountability, and transparency. Combination of local political leaders (called All Party Mechanisms or APM) and central government staff jointly run the local governments, which are known for corruptions[4].

1 Anon 2006. Unequal Citizens: Gender, Caste and Ethnic Exclusions in Nepal Kathmandu: DFID and The World Bank.
2 Dix, S. 2011. Corruption and Anti-Corruption in Nepal: Lessons Learned and Possible Future Initiatives. NORAD Report 18/2011 Discussion Kathmandu: NORAD.
3 Gautam, B. 2008. An Assessment of Administrative Reforms in Nepal Poor Performance of Leading Institutions: Setback to Improve Public Governance. Strengthening Governance in Asia-Pacific Public Sector Administrative Reforms and Capacity Building to Improve Transparency and Accountability. Network of Asia-Pacific Schools and Institutes of Public Administration and Governance (NAPSIPAG), Jawaharlal Nehru University (JNU) and Asian Development Bank Institute (ADBI).
4 T.B. 2011. Aid and corruption in Nepal: Low road through the Himalaya, The Economist, May 31st 2011, 15:43 (online: http://www.economist.com/blogs/banyan/2011/05/aid-and-corruption-nepal), May 31st 2011.

Agriculture still remains a key contributor to Nepal's GDP (36 %)[5] and employs over 70% of the labour force[6]. Foreign aid accounted for nearly 30% of expenditure in agriculture in recent years[7]. Agriculture sector policy and programmes are guided by the Agricultural Perspective Plan (APP), the Interim Plan (2010-13) and the National Agriculture Policy 2004. Recently, the Ministry of Agriculture and Cooperatives (MoAC) has also developed the National Agricultural Sector Development Plan (2011). The Agricultural Perspective Plan (1994/95-2014/15) focuses on accelerating agricultural growth by transforming the subsistence-based agriculture into a commercial sector. Currently MoAC is preparing a new Agriculture Development Strategy with support from ADB and IFAD. This is expected to succeed APP once the latter expires.

The new three year interim plan which provides overall direction to development programmes in Nepal states that its goal is to enable people to 'feel' the improvement in livelihood quality which is expected through 'poverty alleviation and establishment of sustainable peace through employment-centric, inclusive and equitable economic growth[8]'. For the agriculture sector, the plan emphasizes two aspects: enhancing the contribution of agriculture in food and nutritional security, and to increase productivity of agriculture and livestock commodities. To achieve these, the plan identifies several strategies such as commercialization, infrastructure, improved livestock breeds, regulation of food agriculture, climate change resilient and conservation oriented technology, promoting agriculture biodiversity, coordinated research and extension, and contract and cooperative farming.

Public administration in the agriculture sector is led by MoAC. It has four departments: the Department of Agriculture (DoA), the Department of Livestock Services (DLS), the Department of Cooperatives, and the Department of Food Technology and Quality Control. The National Agricultural Research Council (NARC) is an autonomous research body under MoAC. There are three national boards to promote tea and coffee, cooperatives and dairy. The two departments DoA and DLS have 75 district offices and service centres at the sub-district level. DoA has 12 directorates of which the Plant Protection Directorate (PPD) is the one implementing the IPM programme. The National Agriculture Research and Development Fund (NARDF) were established to support demand driven adaptive research and development on a competitive basis. Its board is chaired by the secretary of MoAC.

MoAC and its departments have made their programmes more decentralized, involving local bodies and farmer groups in planning processes. There are still issues and concerns about whether the centralized research and extension system has failed to deliver locally specific, adaptive extension services.

5 MoAC. 2012. MOAC website (http://www.moac.gov.np/) [Online]. Kathmandu: Ministry of Agriculture and Cooperatives [Accessed March 8, 2012 2012].
6 CBS (2003) Population monograph of Nepal (Vol. I and II), Central Bureau of Statistics. Thapathali, Kathmandu, Nepal
7 Karkee, M. 2008. Nepal Economic Growth Assessment. Kathmandu: USAID.
8 Gon 2010. Three Year Approach paper 2010/11- 2012/13. In: Commission, N. P. (ed.). Kathmandu: Government of Nepal

3.2. INTEGRATED PEST MANAGEMENT IN NEPAL

Justification and background

Despite a relatively low average use of pesticides in Nepalese agriculture, misuse and overuse, particularly among commercial farmers, pose a health risk to the public and have in numerous cases caused serious poisoning. The illegitimate use is due to unawareness of toxicity, availability of toxic pesticides, aggressive marketing by dealers and profit interests[9]. Many farmers do not understand the instructions written on the pesticide labels. The harmful effects of pesticides have been experienced by farmers and their families and documented by studies. Overuse of synthetic pesticides has also resulted in pest resistance to pesticides, resurgence of pests, elimination of natural enemies and disruption of ecosystems.

Although the agricultural policies during the last few decades promoting higher input of chemicals, particularly in the irrigated areas of the Terai region, have resulted in higher yields and more food, they have also resulted in poisoning, health related poverty and environmental degradation.

On the other end of the scale, poor farmers in remote areas may not have access to any form of pest control. The annual loss of pre- and post-harvested crops in Nepal was in 2000 estimated at 25-30 %[10]. There is, therefore, a need for alternative pest control measures for both commercial farmers currently overusing pesticides and food insecure subsistence farmers living at the mercy of pests.

A healthy, effective and lasting mechanism for plant protection is required for food security, food safety, poverty reduction and rural development.

Integrated pest management

IPM seeks to integrate all possible actions available to the farmer, such as selection of resistant crop varieties, correct planting time, optimal growing conditions, manual pest control, use of repellents and pheromones, use of biopesticides, careful and correct use of synthetic pesticides, etc. to reduce pest damage to a minimum. IPM programmes combine knowledge from plant physiology, plant nutrition, applied entomology, plant pathology, weed science and nematology. Underpinning the work of each of these functional disciplines, however, are the more fundamental scientific principles of ecology, population genetics, socio-economics, and crop production.

IPM farmer field schools

Realizing its relevance and potential, the Nepal government has given priority to train farmers in IPM methodologies through IPM farmer field schools. The field schools are both a technical and a social process that relies on well-functioning institutions and must be implemented through an ecological and farmer-driven programme.

9 Palikhe, B.R. 2002. Pesticide Management in Nepal: In view of code of conduct. Regional Workshop on International Pesticides, 26-28 July 2002. Bangkok, Thailand.
10 Shrestha, K.K. 2001. Pesticide Management Program: In view of RENAO activities. Project Management Committee and Tripartite Review Meeting on the RENAP, 9-10 July 2000. Nantong, China.

IPM programmes typically incorporate several complementary pest management practices that are both location and crop specific. It is often difficult for farmers to observe the benefits of each specific IPM component since the full impact of these benefits may be realised only over time as opposed to the use of pesticides, which instantly leave behind dead insects. The need to understand the biology of pests and beneficial organisms as well as crop ecology to succeed with IPM, should be evident.

Since pests may move easily from one field to the next, some IPM technologies may be ineffective unless adopted by all farmers in a region. Joint application of techniques such as area-wide insect mating disruption, classical biological control, augmentation techniques, conservation of natural enemies and border spraying, can be effective at a relatively low cost for each farmer. Mobilization of communities for simultaneous action can be very effective, although a challenge in rural areas in Nepal. To facilitate both learning and joint action, farmer field schools have proven to be very cost-effective.

Objectives and achievements of Phase I

The first phase of the National Integrated Pest Management Program (2002-2007) had the following two main objectives:

(1) To contribute to institutionalising a sustainable national integrated pest management programme (IPM) by strengthening the capacity of the Plant Protection Directorate (PPD), collaborating national, regional and district level training and extension institutions in the governmental and non-governmental sector to integrate IPM training and support program for smallholder farmers.

(2) To empower farmers to increase production and productivity efficiently while protecting the environment, conserving the biodiversity and avoiding health hazards for betterment of their livelihood.

The two main objectives of the programme corresponded well to the needs of Nepal and the programme had a clear linkage and follow-up with past regional IPM projects in Asia and Nepal. The programme operated in almost all districts and was conducted in close interaction with the primary beneficiaries, the small-holder farmers. The programme had catalysed significant changes in pest management thinking and practices among participating farming communities towards judicious use of synthetic pesticides and adaptation of alternative control measures such as cultural control, biological control and botanical pesticides.

The use of the farmer field schools had shown that even in the situation of violent conflict, such community need-based agricultural development activities could be implemented with minimal disturbance. The amount of activities and geographical spread of the programme was impressive compared to the minimal staff associated with the programme at the central level.

Recommendations and objectives for Phase II

Towards the end of Phase I, involved partners recognized a need to bring government agencies, research and teaching institutions, NGOs and farmer associations closer together in a concerted effort to develop and promote IPM. It was also found necessary to strengthen the PPD to coordinate the national IPM programme, and there was a need for developing new

modules and refining old ones. In view of this, – and to facilitate better cooperation and to scale up IPM implementation – continued financial and technical support was clearly needed beyond Phase I.

Research has not been a major component of the programme. Nevertheless, the programme has invited research institutions to take advantage of the opportunities for research within the programme. Monitoring and evaluation were insufficient in Phase I due to unclear mandates and inadequate resources.

Phase II was designed with the same two main objectives as for Phase I except "linking to markets" was added to Objective 2. Phase II emphasizes consolidation, up-scaling and institutionalisation of previous achievements. The programme seeks to include women and disadvantaged groups and has improved planning and monitoring so as to ensure equitable access to program benefits. IPM is currently being promoted for rice, vegetables, potatoes, tea, apples and citrus crops.

4. EFFICIENCY OF THE PROGRAMME

4.1. VERIFICATION OF PROGRESS WITH REGARD TO INSTITUTIONALISATION

Ministry of Agriculture and Cooperatives

With the new IPM policy, which is likely to be adopted by the Cabinet shortly and its inclusion in future development plans (such as the Agricultural Perspective Plan, Interim Plan, and Sector Development Priority), there are reasons to assume that the IPM policy will permeate all relevant government agencies. However, there are still some institutional capacity issues as discussed below.

Coordinating agencies, PPD and FAO

The transfer of responsibility from FAO to PPD is on track. PPD is now leading the programme and is responsible for monitoring and evaluation, while FAO has taken the role of module development and technical backstopping as originally planned. PPD has increased its professional capacity and has a capable leadership with professional background from plant protection and plant health as well as experience from education and teaching. The number of core staff within PPD has increased from about three in Phase I to five in Phase II. However, three of the staff at the IPM unit are seconded to PPD by other directorates under the Department of Agriculture and thus not permanently employed by PPD. The staff is responsible for five intensive districts and the remaining 63 regular IPM districts. Three to five staff within PPD are not sufficient to continue developing and implementing the national IPM programme in Nepal. As the new federal or decentralized structure of government is under discussion, the government is less likely to strengthen administrative units at the national level.

A separate IPM unit was established within PPD in 2008. This unit has 11 new staff members focusing on the 12 intensive districts where FAO is operating. Staff salaries and operational

funds are financed through the FAO component of the programme. This unit provides technical backstopping to PPD and DADO in both intensive and regular districts. PPD benefits from the technology developed and delivered by FAO in the pilot districts. This includes development of curriculum and training modules, designing post-FFS activities and follow-up programmes for FFS groups and marketing issues. PPD reports that on the technical side the responsibility is shared 60/40 between PPD and FAO. FAO has an important role to play as a backstopping agency with its links to the global scientific community until MoAC formulates a structure to strengthen PPD, enhances the coordination among DoA directorates and also brings in NARC as a partner.

Research institutions

Collaboration between national and international research institutions to address pest problems could be improved. Applied and basic research is required to support IPM now and in the future, particularly as new pest problems will arise with climate change. The 2006 Midterm Review emphasized that low priority for research in the programme was a weakness. A recommendation was made to collaborate with NARC and universities, whereby they would contribute through their regular funding. This has not materialized with respect to NARC. To date, only an MoU has been signed between NARC and the IPM programme. A few minor research projects funded by the programme, has been carried out, but this is inadequate.

Educational institutions

The Institute of Agriculture and Animal Science (IAAS), Rampur, has shown a remarkable effort to include IPM and FFS in its curriculum. IPM programme staff has contributed strongly to the development of these new courses. In addition to the theoretical training, field studies and practical applications have been introduced in the courses in the form of a student field school. The students can thereby get hands-on training with specific crop and pest problems and learn how and why farmers need to follow their crops on a daily basis. After graduating, the students will be posted at the district- and sub-district agricultural offices as junior technicians or junior technician assistants (JT/JTA). They will have a good background in both IPM and FFS, and they will not need the full training from the IPM programme as is the case today.

The Council for Technical Education and Vocational Training (CTEVT), Bhaktapur, and the Himalayan College of Agricultural Sciences and Technology (HICAST), Bhaktapur, have also incorporated strong training programmes in IPM for their agricultural students.

District support services

The IPM programme is incorporated as a core activity of the district- and sub-district agricultural offices. In Phase I, the District Agricultural Development Officers (DADO) did arrange some IPM activities, but they were separated from the IPM programme. Now, the DADOs are directly involved in the IPM programme. This ensures continuation of IPM knowledge and capacity in the districts when – or if – the programme ends. The programme is now extended to 55 districts in addition to the 17 intensive districts. The Plant Protection Officers (PPO), Agricultural Development Officers (ADO), Junior Technicians (JT) and JT Assistants (JTA) in the districts have been included in the IPM training, and are the resource

personnel for training of farmer facilitators and farmers. This should also be seen as a contribution to institutionalise the programme in the districts.

The District Development Committees (DDC) have been instructed by the national government to spend 15% of their budget on agricultural development. Attempts have also been made to engage the DDCs and the Village Development Committees (VDC) in IPM project planning. But the lack of elected officials in these bodies has rendered them partly inattentive to the farmers' needs for IPM planning and implementation. To strengthen the farmers' voice, the IPM programme has assisted farmers in forming registered groups which will be developed further into farmer cooperatives. The programme has an opportunity to remain alert to unfolding developments in local governance in Nepal and then explore how planning and implementation in the districts and VDCs, can be better coordinated with the activities of these local bodies. However, the programme has not interacted directly with ongoing reform programmes such as the Local Governance and Community Development Programme.

Farmer groups and farmer institutions

Consistent with the relative budget allocation, the most significant progress has been made in organizing farmers in field schools, producer associations, and marketing groups. The organisation of farmers has been remarkably successful even during the period of unrest.

The programme has, apparently, been faced with a choice between doing a thorough job among a relatively small number of farmers and a more superficial job among a larger number of farmers. The programme has, to our understanding, chosen the first option. The promotion of IPM among farmers has revealed that "*institutionalizing IPM among farmers*" requires that a whole set of factors beyond pest control are addressed. The additional factors include marketing, storage facilities, certification of IPM products, manufacturing of biopesticides, information service, savings and loan schemes, etc. "Institutionalisation" among farmers means, in effect, that a range of constraints are removed such that farmers are at liberty to practice full-scale IPM on their farms. The programme has recognized the complexity of the farmers' situation and attempts to assist them in removing obstacles. However, dealing with such a wide range of subjects is costly and time consuming for the project.

4.2. DONOR COORDINATION

Value added by a separate National IPM Programme

Foreign grants to the agriculture sector have been rising consistently for the last five years. According to MoAC, 11 major donor-funded agriculture projects are currently being implemented in Nepal. For the fiscal year 2010/2011 (July-July), donors provided grants worth USD 20 million for the agricultural sector. Among these, three ongoing investment programmes in agriculture are of particular relevance to the IPM programme:

Commercial Agriculture Development Project (CADP) is funded by ADB and operates in 11 eastern districts. The programme started in 2007 with the objective of reducing poverty and to accelerate the process of agricultural commercialisation by building on earlier project initiatives, and responding to the needs of stakeholders by strengthening linkages and

ensuring fair benefits to poor disadvantaged communities and women. The programme will be terminated in 2013.

Project for Agriculture Commercialization and Trade (PACT) is funded by the World Bank (USD 10.5 mill.) and will operate in the Central Region and in the Terai area of the western regions from 2009 to 2015. The overall project objective is to improve the competitiveness of smallholder farmers and the agribusiness sector in selected commodity value chains in 25 districts. This will be achieved by:

1. Helping farmer groups and cooperatives engage in profitable market-oriented production and improved access to markets through the provision of technology and information services and critical public infrastructure and linkages to agribusiness.
2. Creating and strengthen industry-wide partnerships along the value chain, thus forging linkages between producers, traders, processors, and other stakeholders.
3. Reducing existing obstacles to agriculture and food trade thereby increasing the ability of farmers and agribusiness to respond to sanitary and phytosanitory measures and food-quality standards to meet domestic and international market requirements.

Nepal Economic, Agriculture and Trade (NEAT) is funded by USAID and operates nationally. Implementation is coordinated by Chemonics International Inc. through a consortium that includes Fintrac, CEAPRED, Land O'Lakes, The Kaizen Company, Making Cents International, METCON Consultants and WOCAN. The programme consists of five main components:

1. Fostering a conducive business environment for private sector led growth.
2. Encouraging competitiveness and exports in selected agricultural commodities.
3. Enhancing food security.
4. Improving trade and fiscal policies and practices to facilitate trade and increase revenues without distorting the economy.
5. Strengthening microfinance policy and institutions to increase the access of women, poor and disadvantaged to financial services.

Three new, large donor-funded projects with a total budget of USD 91.5 million are currently being established to improve food security in remote and food insecure regions and to improve productivity to increase farmer income. The three projects, which are likely to start in the next fiscal year 2012/2013, are:

Nepal Food Security Enhancement Project will be funded by the Global Agriculture and Food Security Program (GAFSP Trust Fund). It will run for six year with a total budget of USD 46.5 million. The Nepal government will add USD 11.5 million to the project.

Food Security Investment Programme will be funded by the Asian Development Bank. It is estimated to cost USD 15 million.

Accelerated Agricultural Growth and Productivity Programme will be supported by the International Fund for Agricultural Development (IFAD). As of February 2012, the project is still in the design phase. It will focus on seed security and vegetable and cereal production in the western and mid-western regions. The project cost is estimated to be around USD 30 million.

None of the six large-scale programmes listed above have a particular focus on pest control. Nevertheless, all of them will, no doubt, face pest control as a crucial issue in their endeavour to secure food availability and rural development. It is equally clear that these programmes will not have the required competence within their own project staff to advice farmers and district administration on IPM. The programmes will have to seek information and support either from PPD, NARC or from universities.

Merging the IPM programme with any of the above projects will most likely be impractical or undesirable for at least three reasons: 1) The IPM programme should be a permanent institution within the line agencies, while the other projects are likely to be temporary; 2) if merged, the IPM programme may lose its national mandate since potential partner projects are commonly geographically limited; and 3) if merged, the IPM programme would most likely become less available for other projects, institutions and NGOs in terms of knowledge sharing. The Government of Nepal should rather continue in the current direction of establishing a national IPM programme with the PPD as the headquarters for scientific, policy and extension service provision in partnership with scientific, administrative and implementing organisations on national, regional and district levels.

A sound, effective and durable mechanism for plant protection is essential for food security, poverty reduction and rural development. To serve its function, the mechanism requires a strong, national institution that can serve all implementing agencies – governmental and non-governmental.

The current IPM programme attempts to build such a national institution that will serve all active partners. The value added by the Norwegian supported programme is already substantial and is likely to increase in terms of importance and scale as the new agricultural development programmes become operational. The Norwegian support has been particularly valuable towards reaching the goals by being flexible, result oriented and durable.

Norwegian contribution to the IPM programme

To date, Norwegian scientists have been instrumental in developing IPM in other parts of Asia but not in Nepal. Despite extensive competence in IPM from Asia as well as from Africa and Norway, Norwegian scientists have not been involved in the current IPM programme. To a large extent, this has been due to the low input – for budgetary reasons – of research to the programme so far. Norway has a similar decentralized service provider system as Nepal, both in terms of research stations and extension service. In both countries this is largely a result of topographic and climatic diversity that requires special attention when developing IPM strategies for different crops. A network of agro-meteorological stations is needed in Nepal to provide data for forecasting local, regional and national pest outbreaks. This is one area where Nepal could benefit from Norwegian expertise. Norwegian scientists could also assist in building a system for food safety monitoring, particularly in terms of training in pesticide residue analysis.

Options for donor coordination in the pest management sector

The National IPM Programme in Nepal Phase II is the only programme with a long-term national triple mandate to develop pest control technologies, establish proven methods for farmer field schools and promote IPM among the nation's farmers. Other actors in the field of IPM implementation have a much more limited mandate. Typically, the other actors may

either be NGOs with a relatively small budget, operate in a limited geographical area, operate in a broader field such as rural development, or operate within a short project time span of only two or three years. Coordination of the national pest management sector should, therefore, rest within the PPD as a national hub for IPM technology and application.

As the principal donor to the IPM programme, a representative from the Norwegian donor would be able to serve an important coordinating role in the technical level donor's food security working group that meets monthly chaired/co-chaired by USAID/FAO. The group includes donors working in agriculture and nutrition plus FAO and the World Food Program. This group has served as a forum for information sharing and programme coordination and could probably serve as a useful arena for IPM donor coordination. The Norwegian donor could advocate needs and gaps to be filled as identified by the IPM programme, particularly regarding investments in the sanitation and phytosanitation infrastructure to improve food safety in Nepal.

The norms for support to participants in farmer field schools are commonly significantly higher when arranged by international NGOs compared to the Nepalese government. This difference poses problems in the field when communities request higher benefits than the government programmes can offer. In some instances, this conflict has resulted in farmers losing interest in government programmes. Meetings have, therefore, been held between the Ministry and the NGO NCC Coordinator to adjust the norms across all institutions involved in field schools. However, the agreement has yet to be put in practice, and the government is at times losing the competition with NGOs for the attention and interest of farmers.

A summary of projects and programmes with relevance to the IPM programme is presented in Appendix 2.

For reasons further elaborated on in Chapter 5.1, the IPM programme should consider available options for partnering with investment programmes in agriculture, either directly or through coordination by the District Development Committees. Cooperation will make it possible for the IPM programme to continue specialising in IPM while investments in marketing, formation of cooperatives, storage, transportation, irrigation, etc. can be supported by suitable supplemental programmes. The IPM programme and potential partner programmes will need to make plans for how a joint effort can be made possible.

4.3. EFFICIENCY OF ACTIVITIES CARRIED OUT

Progress among farmers and district officials has been assessed through discussions and observations with the respective stakeholders in the field. Farmers, plant protection officers and junior technicians have been interviewed in an arena where they feel confident, i.e. in their own fields and in their villages. During the review, the team visited four of the 17 intensive districts in the Terai and Mid-hill regions (Kavre, Tanahu, Chitwan and Bara). The DADOs in three of the four districts were also visited. High mountain districts and districts under regular IPM implementation (PPD) were not visited.

Development of manuals for IPM in different crops (curricula)

Although farmers in Nepal have been cultivating crops for generations, they may have limited knowledge regarding the production of healthy crops and optimalisation of their

limited resources. Knowledge of agricultural practices is important for success or failure when farmers receive IPM training and apply new techniques in their fields.

The IPM programme appreciates the farmers' needs for training in agricultural practices and has therefore included these practices as the initial part of the farmer field school curriculum in all crops. Farmers recognize the initial training as a necessary component of the IPM education. Members of field school groups repeatedly expressed that "*We have now learned how to grow our crops in a better and more efficient way than we did before*". New knowledge includes attention to seed quality, handling of seedlings, preparation of seed beds, spacing of plants, planting time, application of organic and chemical fertilizers, utilization of local resources (cow urine, dung, botanical pesticides). Farmers receive information on the whole chain of good agricultural practices that are necessary to produce strong plants that are well prepared to resist attacks by pests.

Development of curricula for each crop and proper IPM training of farmers require substantially more funding than training to reduce overuse and misuse of synthetic pesticides, prophylactic spraying and spraying based on fixed time intervals.

As suggested in the mid-term review of Phase I, new curricula have been developed in apples, citrus, tea, several vegetable crops, potato and in some spice crops. The quality and content of the curricula show high standards regarding good agricultural practices, scouting and monitoring of pests, exercises to distinguish harmful and beneficial insects in each crop, and insect zoos for demonstrating ecological interactions between pests and natural enemies. Prognosis and forecasting of outbreaks of certain disease and insect pests are not yet developed, although they are necessary IPM tools for further reduction in pesticide use, particularly prophylactic and calendar spraying.

IPM awareness and market opportunities

Field visits in Kavre and Bara showed that farmers have significant knowledge about IPM and clear opinions about the advantages and knowledge they had gained from the year-long IPM-FFS training. Last but not least they had started to see their strength as FFS-groups, that individuals in the group were collaborating more and supporting each other. They also had opinions on how the group could become a cooperative or formalized in other ways. Farmers in Tanahu and Chitwan had a similar good understanding of IPM principles, although less experience from their own fields due to the fact that the FAO-intensive districts had been operative for one to two years longer than the districts where PPD was the implementing agency.

The consulted farmers in the four districts are dependent on efficient marketing of their IPM-products. In small towns and rural areas, consumers are generally not concerned with food safety and the potential health benefit of buying IPM products versus non-IPM products. Awareness campaigns are, therefore, needed to raise the consumers' willingness to pay extra for IPM products. In larger cities like Kathmandu, on the other hand, there is a large market for IPM products and IPM producers are not able to supply enough IPM vegetables.

Efficiency of IPM farmer field school training

Integrated pest management is a complex science. Outbreaks of pests fluctuate from year to year depending on ecological factors and weather conditions. Inherent to the IPM technology,

is the need to understand causes and effects of ecological variations in crops. Obviously, training of farmers cannot be done in a classroom over a short period of time. Most farmers are not receptive to abstract knowledge. Farmers should learn from field experience over whole cropping seasons and over entire annual cropping cycles under close guidance by experienced teaching staff.

The programme is faced with the dilemma of quantity versus quality of trained farmers. The midterm evaluation of Phase I recommended that the programme to some extent shifts emphasis from quantity to quality by introducing whole-year training of farmers. Later, the need for follow-up training in the second year has been recognized. In addition, the FAO pilot studies have shown that the formation of registered farmer groups with the intention to form cooperatives and facilitate collective marketing of IPM products, is advisable.

The farmer field schools arranged by the IPM programme have, therefore, become more comprehensive than practiced earlier in other parts of Asia. Naturally, the more far-reaching field schools developed by the programme require more investments than the simpler versions of field schools.

In line with the findings of the midterm evaluation team from 2006, the current evaluation team supports the development of more comprehensive training of farmers. The formation of groups and organisation of marketing are also necessary, although the funding of these activities should probably be sought from other sources than the IPM programme.

The IPM programme is bound by very strict regulations for disbursement of funds for farmer field schools, training expenses, allowances, etc. As far as the team can judge, the field schools should be seen as financially efficient.

Efficiency in management and reporting

The programme appears to be efficiently managed. The number of staff is small – possibly critically low – in relation to the work load. A large volume of monitoring data are stored and processed competently and efficiently. However, the semi-annual reports could possibly be simplified with some of the data presented in annexes. The value of the semi-annual reports would be enhanced if they contained cumulative records.

4.4. COMPLIANCE WITH AGREEMENTS AND REVIEWS

Partner contracts

The team has not detected any deviations from contractual obligations among programme partners beyond minor delays, which should be considered unavoidable given the complexity of the programme. Overstepping of deadlines for meetings and reports has occurred although not beyond understandable and tolerable limits.

Implementation of earlier recommendations

Three documents give advice to Phase II of the IPM programme:

1. National Integrated Pest Management (IPM) Programme in Nepal; Midterm Review Report, 2006

2. National Integrated Pest Management (IPM) Programme in Nepal II; Appraisal of Project Proposal, 2007
3. National IPM Programme in Nepal: Consolidation, Up-scaling and Institutionalisation, Phase II; Inception Report, 2009

The following three Tables compare the recommendations of the Midterm Review and the Appraisal Report as well as the main plans for Phase II (according to the Inception Report), with the evaluation team's assessment of the current status of Phase II of the programme (Tables 1-3).

The IPM programme's follow-up of recommendations and project plans appear to be very satisfactory. The programme management has clearly incorporated the recommended activities into the daily operations of the programme.

Table 1. Recommendations made by the Midterm Review of Phase I 2006 and corresponding assessment of current status in Phase II.

Recom. in Midterm Review 2006 (abbr.)	*Assessment of the current situation in Phase II*
The GoN should contribute more to the process of institutionalizing IPM	IPM is now mainstreamed in all levels of government. The newly proposed IPM Policy will formalize IPM. The GoN could contribute more to increase collaboration with national funded research institutions (NARC/Universities)
Incorporation of the IPM programme as core activities in districts	District funding will depend on plans for promotion of IPM. The IPM programme is included as one of the core activities of DADO. DADO staff is responsible for IPM-FFS in their district and eager to implement.
Collaboration with research institutions	Ad hoc collaboration with NARC divisions is in place, but not through central administration. Collaboration with IAAS and HICAST established. NARC should contribute with basic and applied IPM-research even if there is no budget line for NARC in the programme.
Include IPM and FFS in university teaching	Included at IAAS, Rampur (field-based practical training [popular among students] along with theoretical courses). CTEVT and HICAST have explicit cooperation with the IPM programme. The PPD Director is a very popular teacher among HICAST students in entomology.
Share knowledge with other IPM programmes	Already done. PPD arranges training for separate NGOs and WB funded programmes.
Promote IPM in schools	Already done in some high schools.
Partnership between GOs and NGOs	Done. Training and curricula given to NGOs.
Use JT/JTAs for IPM teaching	JTs/JTAs have been trained as IPM-trainers and are now resource persons for IPM-FFS at the district level, contributing to decreased costs in the future for training of facilitators.
Broaden IPM to include diseases and nematodes and use of biological control agents and conservation of natural enemies	Diseases have been included but not nematodes due to lack of specialists. Testing of biopesticides, particularly entomopathogenic fungi, has made significant progress. Local/national production of several biopesticides has started and when farmers can have reliable access to these it can have great impact on the reduction of synthetic pesticides. Rearing of natural enemies is in the pipeline, but so far adequate laboratory facilities are an obstacle to large-scale production. Simple methods for conservation of natural enemies could be more emphasized in the FFS curriculum.
Teach food safety and pesticide residues to farmers	Harmful effects of pesticides and residues in vegetables are an essential part of FFS training. Farmers are well aware of acute health symptoms, but less aware of the chronic consequences of prolonged exposure to pesticides. An up-to-date national laboratory for pesticide residues analysis is needed before food safety can be properly addressed in Nepal.

Expand FFS to whole-year cropping cycles	Done successfully in the intensive districts. Popular among farmers even when more time consuming.
Include late blight disease in tomato and potato	To a lesser extent because it requires engagement from research in collaboration with extension to develop adequate forecasting systems before farmers are convinced to move away from prophylactic spraying. Effort is now on selection of resistant varieties.
Include IPM in tea	Done in the eastern regions. Input from research is needed to solve pest problems.
Include IPM in apple	Is under development, IPM-FFS carried out in Mustang, but not yet in Jumla. Input from research is needed.
Make FFS culturally sensitive and ethnically inclusive	Great attention is paid to adapt FFS to the knowledge and skills of farmers and the inclusion of women, minorities and excluded people. The FFSs are seen as local arenas for inclusion and peace building. Farmers from the Taro-community are strongly represented. A number of facilitators are women. Indigenous knowledge for pest control included in the training and manuals.

Table 2. Recommendations and comments in the Appraisal Report (2007) and corresponding assessment of current status in Phase II.

Recommendations by the Appraisal Team 2007 (abbreviated)	*Assessment of the current situation in Phase II*
1. Monitoring and evaluation needs to be more concrete.	Part of Phase II; satisfactory progress
2. The government, through PPD, should take more responsibilities for IPM.	Part of Phase II; satisfactory progress
3. Plan for involving NGOs and universities should be made.	Collaboration exists, but not adequately grounded on specific issues and opportunities about promoting IPM
4. Clarify support to District Coordination Committees and/or farmer associations regarding the formation of viable institutions.	Part of Phase II; support to farmers to form groups and eventually cooperatives has high priority
General Comments by the Appraisal Team (abbreviated)	*Assessment of the current situation in Phase II*
1. Formalized links to universities are needed.	Part of Phase II; satisfactory progress. IAAS, CTEVT and HICAST have explicit links with the IPM programme.
2. Plan for broadening the FFS curricula, one-year cycle FFS, IPM for tea and fruits and field demonstration for school students is not included in the proposal.	Part of Phase II; satisfactory progress
3. Data is needed to prove that "*IPM-trained communities reduce pesticide use by an X-percentage*".	Lack of laboratory for pesticide residues analysis prevents documentation. A survey was made in 2011, but methods and detection limits are not described, thus making data unreliable. Self-reported use of pesticides by farmers is collected through the farmers' field manual. National statistics on pesticide use are too weak to extract information on reduction in pesticide use in crops and/or geographic regions.
4. Define and delineate "pesticide risk zones" based on pesticide use (quantity, quality and frequency) to prioritise IPM intervention in districts and agro-ecosystems.	Two baseline studies in 2011: "Impact study on the use of chemical pesticides in intensive IPM districts in Nepal" and "Baseline study for Impact Assessment of the National Integrated Pest Management Program in Nepal".

Table 3. Main aspects of Phase II according to the Inception Report (2009) and corresponding assessment of current status in Phase II.

Main aspects for Phase II according to the Inception Report 2009 (abbreviated)	*Assessment of the current situation in Phase II*
Gradually take over the IPM programme by the PPD and other MoAC agencies starting with IPM in rice in selected districts.	Part of Phase II; satisfactory progress
Mainstream IPM the programme at national, regional and district levels and expand it through the extension service and farmer-to-farmer diffusion.	Part of Phase II; satisfactory progress
Scale up of IPM-FFS and strengthen the IPM-FFS groups/associations/cooperatives to continue with action research leading to the adoption of IPM technologies, optimal production and marketing of safer commodities.	Part of Phase II; satisfactory progress, but involvement by research institutions is necessary.
Network/coordinate/collaborate with INGOs/NGOs, NARC and other research/ educational institutions and universities.	Part of Phase II. The fact that the IPM programme does not have a research component means that research institutions like NARC and universities must collaborate on the basis of their own core funding. Given this restriction, the progress is deemed satisfactory from the standpoint of the IPM programme, but not from the standpoint of government participation in IPM through NARC. Universities show greater contributions and are active partners in the IPM programme.
Effective impact monitoring and evaluation of IPM programme.	Part of Phase II; satisfactory progress
Establish procedures to ensure transparency and accountability.	Part of Phase II; satisfactory progress

5. EFFECTIVENESS OF THE PROGRAMME

5.1. FARMER FIELD SCHOOLS AND IPM MAINSTREAMING

Farmer field schools in comparison to other approaches used by donors

The farmer field school approach is popular at all levels from the PPD to the farming communities. The practical nature of the field schools, the learning by doing, is essential for people with limited theoretical education. Learning is participatory, and farmers can discuss experiences. Input by farmers forms a valuable contribution. The year-long training enables farmers to learn various IPM tools for different crops during the various seasons and build their ecological understanding. Successful field schools have made the IPM programme very attractive amongst other donors and development organisations. The IPM programme has on several occasions been requested to train staff from governmental and non-governmental development organisations.

Programme contribution to mainstreaming IPM policy

Significant contribution to mainstreaming IPM policy has been made in the second phase of the programme. There have been increased efforts towards institutionalisation of IPM

amongst various related stakeholders such as (i) other directorates within the Department of Agriculture, (ii) educational institutions (HICAST, IAAS Rampur, CTEVT), (iii) NGOs (Caritas, HELVETAS, etc.), and (iv) local government agencies (DDCs, VDCs).

A significant achievement of the second phase of the programme is the drafting of an IPM policy, which is awaiting approval by the Cabinet. The IPM was drafted by a consultant and circulated to various directorates within the DoA for feedback. District service providers and farmer groups were not consulted, however.

The contribution of the Government of Nepal on IPM related activities in addition to the Norwegian grant has increased since the first phase, especially in the 63 districts that do not fall within the 17 intensive districts. PPD has also undertaken complementary programmes such as a plant clinic, rearing of biocontrol agents and pest risk analysis.

The GoN has made some progress in institutionalisation in all areas of education, coordinating organisations, service providers and farmer groups in terms of bringing IPM high on the agenda for these organisations. Less has been achieved in terms of increased staff in IPM at the various agencies. On the other hand, increased staff is not listed as an output in the logframe, and thus the lack of staff expansion cannot be seen as a weakness of the programme. Since the programme provides very little funding for research, it has not contributed significantly to the institutionalisation of IPM within research communities. The programme's low budget for research was based on the presumption that research agencies (NARC and universities) would contribute to IPM on the basis of their ordinary government funds. Universities appear to have incorporated IPM both in their teaching and research.

Adequacy of inputs for the five areas of institutionalisation

Coordinating institutions

The Plant Protection Directorate and FAO have both made progress in mainstreaming IPM through internalization within their own organisations and institutionalisation within educational, service providers and farmer associations.

The core of the PPD/FAO's approach is the capacity building, strengthening and empowering of IPM farmer groups and cooperatives and the support of these groups through greater institutional capacity in building, testing, validating and adopting IPM technology. In addition, the two agencies promote IPM-based production and group certification by farmer groups. This is done by advocacy, marketing and channelling of commodities to the market.

Institutional capacity building has improved with the establishment of an IPM unit at PPD in the second phase and allocation of staff for the IPM programme. The required number and capacity of staff for the consolidation, up-scaling and institutionalisation of the IPM programme, however, is still insufficient. The staffing level is insufficient at PPD as they are often also engaged in other regular programmes at PPD. The Ministry of Agriculture and Cooperatives (MoAC) has not deputed more staff for the IPM programme due to rigid government regulations. More staff will be required within the PPD to ensure the up-scaling of the National IPM Programme. Although staffing levels at FAO seem to be adequate, some positions such as the institutional expert may need to be extended until the end of Phase II, especially since greater efforts towards institutionalisation will be required in future.

In terms of funding input from PPD towards upscaling activities, there are attempts for greater budgetary allocation for the upscaling of field schools in the 63 districts in Nepal that are not covered by the FAO intensive component and the 5 intensive districts selected by PPD for testing and validation of learning from the pilot districts. FAO noted that 12% of the field schools were run using the Government's own budget last year. This amount is insufficient and greater funding from both internal sources and external agencies will be required for faster upscaling of farmer training. At present, the training of farmers is only being carried out in selected wards in each village.

PPD and FAO have been successful in developing the needed human resources for upscaling in the field. In addition to the training of JTs/JTAs, local IPM farmer facilitators have been trained. However, there are only one to two JTs/JTAs per VDC and this is not sufficient to undertake farmer training throughout Nepal. Since the IPM farmer facilitators are from the local communities, it is anticipated that travel costs will be reduced, greater empowerment of local communities will result and IPM facilitators will be able to address issues that are location specific. These local IPM farmer facilitators are not, however, not have any formal role within the local administration (VDC, DADO, DDC), and there is a need to formalize their role.

To coordinate among stakeholders and enable a conducive environment to run IPM activities, IPM coordination committees at a national level (NCC), regional level (RCC) and district level (DCC) have been set up along with defined roles and responsibilities. Input has been provided to regularize coordination committee meetings at these levels. All required financial budgeting forms part of the government allocations. The committee meetings are seen as a positive step, although meetings are not always regular.

Some traders have expressed willingness to pay 25% more for IPM products. Support is being provided by PPD to facilitate agreements between buyers and farmers. The marketing of products, however, has a larger scope than initially envisioned in the programme documents, and it is recommended that greater support from other directorates within the Department of Agriculture is mobilized. Also, this part of the IPM value chain will require the support of various stakeholders such as NGOs, other directorates and donors to develop the needed infrastructure, such as produce collection points, transportation systems, etc.

Greater input has been provided by PPD towards mass communication on the benefits of IPM through hoarding boards, radio and TV. Nepal lacks certified laboratories for pesticide residue analysis. Testing of pesticide residues in IPM products and products using injudicious amounts of synthetic pesticides could help raise greater awareness on the harmful effects of excessive pesticide use.

Research institutions

Institutional cooperation with the main research institution, NARC, is limited to a few small research assignments through individual scientists in various programmes undertaken by PPD. NARC was not formally involved in the IPM from the beginning since the programme did not include any major research components.

Attempts have been made by the GoN to bridge this gap through the drafting of a MoU between PPD and NARC. NARC has provided feedback on this. However, this has not yet resulted in the finalization of the MoU. NARC has been involved in developing IPM

technology but only on a project basis and disconnected from the training of farmers. Individual collaboration on an individual scientist level also does take place, e.g., biocontrol agent rearing programme.

NARC has considerable technical capacity. It has a strong plant pathology department, entomology department and seed technology department – all of which are directly related to IPM. They also have a soil laboratory and related equipment. NARC does some analysis of pesticide residue, but does not have the capacity to serve the IPM programme in this respect.

Educational institutions

A significant amount of input has gone into institutionalisation of educational institutes through the integration of IPM curricula at educational institutions and the running of student field schools. The three educational institutes that have developed links with IPM include Council for Technical Education and Vocational Training (CTEVT), Himalayan College of Agriculture Sciences and Technology (HICAST) and Institute of Agriculture and Animal Science (IAAS Rampur). PPD has allocated funds for the running of student field schools at IAAS Rampur and for curriculum development meetings.

CTEVT has established an IPM curriculum based on demand. Junior technician assistants (JTAs) who had graduated from CTEVT highlighted the need to include IPM within the curriculum. Curriculum revisions led to CTEVT contacting DoA for assistance with the integration of IPM curriculum into the courses for JT/JTAs.

CTEVT is currently exploring the incorporation of IPM into the ISc[11] Agriculture (ISC + 3 years) and SLC[12] (Class 10 + 1 year + 3 month on the job training). IPM is in high demand, and CTEVT is also attempting to train teachers on IPM for 60 schools (in 75 districts).

There is an increasing push towards farmer field schools so that students can learn with the farmers. At present, there are 6 CTEVT schools in different districts where IPM courses are run and approximately 25 resource persons have been trained to facilitate IPM at these schools. All these schools have their own farms. 120 students from these schools are expected to graduate with IPM training in late 2012. Twenty-five resource persons have been trained.

HICAST has incorporated IPM into its bachelor course in the 5th semester – Integrated Pest Management (2 + 1 credit hour, 30 lecture hours, 15 hours practical). The first batch is expected to graduate in 2013. IPM consists of student-teacher field schools. A majority of the teaching faculty at HICAST are from NARC, PPD and FAO. HICAST has an MoU with PPD that allows HICAST to use PPD resource persons and the undertaking of practicals in government fields. In return, HICAST teaches two students from PPD for free.

IAAS Rampur has attempted to regularize IPM in its teaching. A series of consultations with various stakeholders for curriculum development such as PPD, FAO, HICAST and NGOs have taken place leading to the integration of IPM in the curriculum. The Srijanasil IPM Field School was also set up in collaboration with PPD and FAO and was funded by PPD. IPM has bridged the gap between theory and practice for the students. Students noted that

11 ISc is equivalent to the completion of Year 12 studies.
12 SLC stands for School Leaving Certificate and is received after completion of Grade 10 studies.

they learned about the problems of the farmers and practical solutions. IPM has also strengthened their leadership capacity and has provided them a platform to engage as a group. IAAS students are from 75 districts and they go back to their districts for holidays every year. Diffusion of IPM is also taking place to some extent though the sharing of IPM knowledge in their villages during their school holiday visits.

The IAAS student/farmer field schools are 16 weeks long. Students and teachers gather every Saturday (7 am – mid day) to observe and discuss actions they need to take in the field. Four master facilitators are involved in the field schools, and IAAS is in the process of hiring two other master facilitators. DADO and NARC are also involved at times at the student field schools. The student field schools have become a resource centre where many farmers come along to observe and learn.

Service institutions

The District Agriculture Development Office (DADO) is responsible for technology transfer and supporting the farmers in implementation. The role of DADO is of coordination of all line agencies, government and non-government to disseminate agriculture technology. DADO also plays a key role in supporting the successful running of farmer field schools through enhancement of other facilities such as small irrigation schemes, farm compost manure technology, and seed, bio-fertilizers, and biopesticides availability.

The District Coordination Committees (DCC) have been set up and consists of line agencies (DDC), IPM district committee, graduate farmers and facilitators (one a month gathering), cooperatives and the DADO head. PPD coordinates with DCC directly. DCC works with the District Technical Committee consisting of a horticulture officer, plant protection officer, concerned farmer facilitator and chief of agriculture service centre who undertake technical backstopping. The DCC also works with VDCs. To open a farmer field school, for instance, DCC invites VDCs and asks for their commitment.

Some of the challenges faced by the District Coordination Committees include (i) lack of a market for IPM products, (ii) lack of area-wide pest control (e.g. insects fly from one field to an IPM field), (iii) lack of coordination of DADO with the DDC (at present DDC approves activities undertaken by DADO), (iv) insufficient number of trained manpower at DADO, (v) difficulty in obtaining some of the indigenous materials used in IPM, such as wood ash, biobotanicals, etc., (vi) abundance of synthetic pesticides and lack of biopesticides, (vii) insufficient expansion of production and of farmer training for market regularity of produce – only 1 to 2 FFS per year, (viii) need for diversification, regularity and quantity of products, (ix) lack of IPM policy, (x) need for establishment of an IPM value chain, (xi) need for development of a condensed version of the IPM for other farmers who are interested.

The capacity of DADO in terms of trained manpower and technical backstopping is limited compared to the size of the farming communities. In the case of Kavre, for instance, Kushadevi VDC comes to DADO to demand expansion in all 9 wards but DADO has not been able to undertake this due to lack of resources. At Kavre, 36 of 87 VDCs have not been reached by any district programme.

NGOs are increasingly forming an important role in the undertaking of IPM-FFS. The knowledge source of many NGOs such as CARITAS, SSMP and CEAPRED has been PPD,

and this is one strength of the Norwegian-funded IPM programme. Institutional coordination amongst NGOs and PPD/FAO, however, could benefit from closer contacts.

Farmer groups and farmer associations

The current track of institutionalisation at the farmer level is impressive. PPD/FAO's focus is on empowering farmer groups and eventually to convert them into cooperatives. Farmer groups undergo a one-year FFS, followed by post-FFS, whereby they replicate their learning from the first year in their own fields. This is followed by group strengthening and support, whereby farmers register their groups with the DDCs. As there are no regulations in place for groups, these groups are encouraged to develop into farmer cooperatives.

Issues raised by farmers during the evaluation team's field visits include (i) some of the older farmer groups are no longer active, (ii) production of IPM products is insufficient, irregular and of limited variety for the market, (iii) agriculture commodity collection centres, collection vans required, (iv) greater advocacy and media support required on the benefits of IPM and adverse effects of injudicious pesticide usage, (v) alternatives synthetic pesticides required, (vi) technical support required for marketing, (vii) need for introduction of an area wide concept of IPM (one whole VDC should be IPM declared), (viii) need for support in conversion of groups to cooperatives, (ix) greater budgetary allocation for IPM by the Nepalese government, (x) pesticide residue analysis facilities, (xi) need for greater activation of the NCC and DCC, (xii) need for a higher price for IPM products as an incentive for other farmers to join upscaling efforts, (xiii) need for VDC and DDC to support local communities with infrastructure, (xiv) need for a system that allows new farmers to learn more quickly, and finally (xv) difficulties in accessing biopesticides.

Mainstreaming IPM at the community level is constrained by insufficient marketing facilities. VDCs are to some extent responsible for farming infrastructure, but little progress is being made in the current political climate and partly due to weak bureaucratic structures. Supply of high quality seeds and biopesticides is not satisfactory due to an influx of low quality seeds and pesticides from India. Under these circumstances, the community associations are being empowered by the programme so that farmers can come up with proposals and seek support from the VDCs. In Jhapa, for instance, cooperatives were formed when subsidized fertilizers could not be obtained.

The IPM programme has already adjusted to the needs expressed by the farmers, notably support towards the establishment of cooperatives, better access to storage, transportation and markets, and commercialization of biopesticides. To this effect, the programme has hired a private enterprise specialist. It has also connected with private suppliers for farm inputs to develop viable biopesticides.

However, to make full use of the IPM training received by the programme, the farmers need a wide range of government support that goes beyond the capacity of the IPM programme. It is recommended, therefore, that the IPM programme explores the opportunities to partner with other investment programmes, as suggested in Chapter 4.2, with the aim to supplement each other for a more comprehensive service to the farmers.

5.2. ACHIEVEMENT OF OBJECTIVES

Achievements by the end of programme

The programme is progressing well and moves forward in accordance with its logframe. The takeover by PPD is progressing, but will be hampered by insufficient number of permanent staff in the IPM unit. Therefore, continued external support in some form will definitely be worthwhile beyond Phase II in order to maintain and further develop what has been achieved so far.

A brief assessment of the programme's progress as outlined by the logframe is given in Appendix 1.

Contribution of inputs, outputs and activities

Inputs, outputs and activities are found to be consistent with the logframe in support of the programme's objective, purpose and goal. The programme has decided to stay with farmer groups for some time and invest in their future. This approach is likely to lead to more durable results than a more superficial approach whereby a larger number of farmers are covered although with potentially shorter-lasting impact.

Compliance with Nepal's agricultural sector policy

The document Nepal: TA 1854-NEP Agriculture Perspective Plan (1995) deals with IPM in only one short sentence (p. 31): "*The Agriculture Perspective Plan emphasizes integrated pest management (IPM) to reduce pesticide use*". The document APP Implementation Status Report (Volume 1: Main Report, 2005) observes that the reduction in pesticide use has not been as extensive as expected (p. 70-71):

> *"APP has resorted to complementary IPM practices in crops in order to refrain from excessive use of pesticides. However, questions have been raised in Interim APP itself about the compatibility between the use of IPM and the high growth rate envisaged by the APP. Statistics on pesticide use reflects higher proportion of chemical pesticides being used in Nepal … with very less contribution of bio-pesticides.. Despite APP's focus on IPM, there has been a gradual increase in the use of pesticides in Nepal from 1997 till 2002 with highest input contributed by insecticides such as chlorinated hydrocarbons, organo-phosphates, carbamates and pyrethroids.*
>
> *This comes even in the wake of efforts made to generate and disseminate the IPM technology. DoA has been undertaking Farmers' Field School (FFS) in various districts of Nepal. The IPM techniques proven successful by the research from NARC have been used by these schools and have collaboratively involved farmers in the extension process with the help of extension agents. PPU, under the DoA, started IPM programme with the support from FAO through TCP programme in 1997. After the completion of the programme, FAO again supported HMG/N on IPM through National Community IPM Programme. By the end of 2003 the programme generated 104 officer level facilitators and 415 farmer facilitators spread over 54 district of Nepal. Throughout these districts a total of 700 FFS were conducted educating 20,000 farmers (PPD, 2005)."*

Annex 3: State of APP Impacts (2006) of the status report, states that (p. 86-87) "*IPM should be implemented on a crop-specific basis, by combining chemical, biological, and cultural methods of controlling pest; developing and promoting resistant varieties; and rotating*

crops". Furthermore, it recommends "*rigorous research and extension on IPM*".

The Three Year Plan Approach Paper (2010/11-2012/13), issued August 2010, states in its Chapter 7.19 Agriculture and Food Security, Working Policy item 3.3 (p. 73) that "*Public awareness programmes will be carried out for proper use of pesticides so as to protect people from negative effects of pesticides*". However, the term "*integrated pest management*" is not mentioned in the paper, which was written before PPD proposed the new IPM policy. In our meeting with the National Planning Commission, the officer in charge of agriculture expressed, nevertheless, a keen interest in IPM and stated that the Commission is firmly committed to promoting IPM.

However, in Attachment 2: Nepal Agriculture and Food Security Country Investment Plan (2010), which is a strategic planning and resource mobilization plan following the Three Year Approach Paper (and its subsequent Three Year Interim Plan), points out that (p. 7) "*Excessive pesticides are often used by commercial farms and Integrated Pest Management (IPM) coverage of crops is still limited*".

A second follow-up document of the Three Year Approach Paper, is the National Agriculture Sector Development Priority (NASDP) for the Medium-Term (2010/2011 – 2014/15) issued in July 2010. It covers the issue of IPM by one paragraph (p. 19): "*Excessive use of pesticides and chemical fertilizers is common the commercial farms. It is desirable that such use of overdose should be controlled by determining the quantity to their manageable limits. To minimize the negative effects of excessive use, promoting coverage of Integrated Pest management (IPM) system would another aspect to consider*.

Clearly, the government's concern over overuse and misuse of pesticides and its commitment to IPM has grown stronger from the 1990s until today. Nevertheless, increased commercialization and intensification of crop production has, not surprisingly, lead to an increase in the total use of synthetic pesticides. It is not known, however, to what extent the overuse and misuse has changed over this time period.

Impact of political change on the agricultural policy

The IPM programme has been able to implement its activities despite the political uncertainty in the villages and district administration. Although stronger, more dynamic and more accountable DDCs would have been beneficial for the implementation of the programme, collaboration with the DADOs has been productive. Political leaders in the districts are generally attentive to – and interested in – agricultural development projects.

On the national arena, agricultural development, food security and food safety will stay high on the agenda regardless of the outcome of the political turmoil. Democratically elected leaders will have to serve the agricultural majority of the people and gain their support.

The programme has clearly a democratic and peace building impact in the sense that it empowers farmers, women and to some extent excluded people to demand services from the local and national administrations through education and village organisation.

Stakeholders' view of the programme's performance

The evaluation team's meetings with farmers indicated that the farmers are enthusiastic and appreciative of the services provided by the programme. Not only do the farmers understand the need to reduce the abuse and overuse of synthetic pesticides, but they clearly expressed an appreciation for being able to form producer groups and eventually farmer cooperatives to strengthen their market status as well as their voice in society.

Among district and national administrative and professional staff, the programme is highly regarded for its importance and ability to create change. Representatives for NGOs in the field of agricultural development expressed appreciation for the work done by PPD and FAO particularly in terms of developing the IPM technologies and methodology for running field schools. This constitutes valuable experiences that the NGOs can draw upon in their own programmes.

5.3. DEVIATIONS

No significant deviation from the programme plan has been detected. Outputs and activities as stated in the logframe appear to have been adhered to in detail.

The indicator of 500 farmer field schools for 12,000 farmers (Annex 1, p. 31) will not be reached since not all 9 wards in a village (VDC) were suitable for IPM implementation. Commonly, only 5-6 wards could be covered in each village. Three VDCs were covered in each district. Otherwise, no deviation was detected.

The roles and responsibilities are clearly stated in the programme plan. However, PPD suffers from insufficient staffing. Some positions have been vacant for some time. The hiring process should be accelerated. Three of PPD's staff appears to be on loan from other directorates. These should preferably be permanently employed at the IPM unit of PPD.

5.4. FINANCIAL MANAGEMENT AND RISK ASSESSMENT

Cost control, monitoring, disbursement and transparency

Both PPD and FAO follow the government norms for fund allocation to farmer support and field activities (e.g., costs for field school participation, training, stationaries, per diem, etc). These norms are generally lower than those used by NGOs that are implementing similar field programmes.

The FAO component of the programme is bound by FAO regulations for disbursement and transparency. FAO disburses 80 % of annual budgets to DADOs after clearance by PPD according to government norms for field implementation projects. The DADO releases the funds to farmer groups, while all participating farmers are informed about the funds the groups have received. To the extent the evaluation team was able to verify, the cost control, monitoring, disbursement and transparency of financial transactions appear to be acceptable.

Funding of the five areas of institutionalisation

The financial reporting facilitates a comparison of allocations to the five areas of institutionalisation (Table 4).

Table 4. Funds spent on the five institutional areas in 2011 and aggregated for the programme period until 31/12/11 (USD).

Five areas of institutionalisation	FAO component		PPD component		Total	
	2011	Aggregated up to 31/12/11	2011	Aggregated up to 31/12/11	2011	Aggregated up to 31/12/11
Coordinating institutions	22,000	63,000	59,000	111,000	81,000	174,000
Research institutions	-	-	52,000	97,000	52,000	97,000
Education institutions	29,000	82,000	45,000	84,000	74,000	166,000
Support service inst.	120,000	339,000	190,000	357,000	311,000	695,000
Farmer groups and farmer institutions	287,000	807,000	250,000	468,000	537,000	1,275,000
Sum	458,000	1,290,000	597,000	1,117,000	1,054,000	2,407,000

Involvement of beneficiaries in the financial management

The programme has established a peer group control mechanism among beneficiaries to control funds allocated to farmer groups. All members are informed about financial matters within the group, as well as about allocations to the DADO, such that beneficiaries can exert a control function. In addition to discouraging misuse of funds, providing beneficiaries with insight into financial matters is also meant to serve as a step towards democratization, political participation and increased accountability of public officials. Farmers interviewed by the review team appeared to be reasonably well informed about the flow of funds.

Auditing

Auditing is performed according to government regulations for the PPD component and according to FAO regulations for the FAO component. The sources appear viable and processes should be adequate. In the four out of 17 districts that the team visited, the activities in terms of farmer field schools and staff training were in accordance with the data presented in the annual reports. Based on the proven field activities and the reported expenses in the four districts, there seem to be no indication of needs for supplemental audits of compliance, performance or assets at this stage.

Corruption risks and measures

The programme's strategy for corruption control is primarily a system of *transparency*. At the farmer level, the programme has established a system of peer group control of funds allocated. All members are informed about the financial matters within the group such that all of them can exert a certain control function. The farmer groups are also informed about the allocations to the districts.

The programme managers are confident that there is no corruption among project staff. This is possible because there is hardly any budget line that is flexible enough to get misappropriated – training being the biggest one.

The PPD and FAO also exert a control function on each other based on mutual information sharing regarding activities and accounts and based on PPD's regulatory approval of FAO's activities and budgets.

Programme risks

The major risk associated with the programme, is the political transitions that keep the government system unstable. The political situation may affect the quality of programme implementation due to a potential lack of top-level administrative thrust. The Programme management has, however, learnt to work within such system at the operational level. The risk is minimized, however, by the generally positive outlook on IPM and farmer field schools by all the influential political groups. We can presume, therefore, that the IPM policy and the implementation of its programmes will continue regardless of the outcome of the political struggle. The National Coordination Committee needs to recognize and address this issue.

With the planned new development programmes in agriculture in Nepal, some of which will be channelled through international NGOs, the current programme may experience increasing competition for attention among farmers due to its relatively low level of incentives provided to farmers compared to those of the NGOs. This disadvantage may, however, be turned to an advantage by cooperating with other projects through the district administration.

There is a risk of IPM becoming discredited by farmers who are not properly trained and thus do not achieve adequate pest control. To avoid misconceptions and wrong information from spreading among farmers, the programme needs to maintain the high quality level of its farmer field schools.

5.5. SUSTAINABILITY

Sustainability is a multifaceted concept. In the case of adoption of IPM among farmers and internalization among government and non-government agricultural organisations, sustainability depends first and foremost on the perceived value of the technology. The first step towards institutional sustainability is, therefore, to develop a set of agronomic methods for pest control that works in the field and is deemed superior to alternative methods by farmers and individuals in relevant institutions. Currently, effective IPM methods do exist and new ones can be developed. Likewise, the perception that IPM is a valuable tool to obtain food safety and food security in Nepal appears to be very strong in all the government and non-governmental organisations that the evaluation team visited. In fact, without exception, staff members involved in agricultural development expressed great enthusiasm for IPM as a solution to the threat of contaminated food and environmental pollution by the use of particularly toxic pesticides or excessive use of less toxic chemicals. The combination of applicable technical solutions and expressed excitement among top government officials to farmers constitutes a fertile ground for institutional sustainability of IPM.

Coordinating institutions

The Government of Nepal has made significant progress in institutionalizing the IPM programme through (i) inclusion of IPM in the Government's agricultural sector development plans, (ii) the set up of an IPM unit in PPD, (iii) development of a pool of facilitators for the running of the IPM-FFS, (iv) development of better linkages with various stakeholders, and

(v) development of a draft IPM policy. Significant progress has also been made in the empowerment of farmers through (i) the running of FFS, (ii) the training and organisation of IPM-FFS groups to promote sustainable community agriculture, and (iii) the set up of support services for farmer groups in optimized appropriate technologies, more efficient production and better access to markets in the intensive districts.

The National IPM programme is functioning very well in districts where field schools have been undertaken. There are many districts where this programme has not been able to permeate deeply. For this, further budget allocations will be required as well as increased staff levels at the PPD in the form of programme staff.

Research institutions

The development of the crop specific modules has been undertaken by FAO. Continued basic and applied research in relation to IPM will be required. NARC would ideally be best positioned to undertake this. Due to a lack of budgetary allocations, this has not happened. Success in the upscaling of the IPM programme can only be achieved through a strong research component. For this, in future, the involvement of stakeholders, especial research organisations, from the outset during proposal development is required to ensure a sense of ownership. Such a platform could also aid in the crystallization of levels of involvement.

Educational institutions

Efforts have been put into curriculum development and the running of student field schools at IAAS Rampur, HICAST and CTEVT, but there are concerns from these educational institutions about the lack of institutional linkages between them, the coordinating institutions such as PPD and FAO and research institutions such as NARC. It was noted by these institutions that there were difficulties in receiving current research material to incorporate into the curriculum. For this, further work will be required on the strengthening of such connections.

Service institutions (DDC, DADO)

The uncertain status of the DDCs does not hinder any of the activities undertaken by the DADO. The DDC approves the projects to be undertaken by the DADO. Since IPM's success also lies on other aspects such as good irrigation systems, road networks, market access, etc, the role of the DDC and VDC as important actors for planning and coordination of agricultural development activities needs to be strengthened in order to reach a majority of the farming households in Nepal. Engaging the Ministry of Local Development, Ministry of Finance as well as the various departments and directorates under the MoAC is recommended. The review team is, however, aware of the resource constraints faced by district institutions. Also with the current political climate, changes are foreseeable. This is not expected to affect the IPM programme, however.

Farmer groups and farmer associations

The farmer groups and associations are impressive. Besides the formation of farmer groups, district and regional associations of farmer groups are also being created. Such associations are important especially in the context of an uncertain political climate in Nepal. There is a strong desire from the farming community to adopt IPM techniques. The benefits of IPM are

clear to them, some of which include (i) increased yield, (ii) use of less synthetic pesticides, (iii) safe and healthy food, (iv) a better environment, and (v) the possibility of premium prices for IPM products. Some of the aspects that will need to be strengthened for further institutionalisation of these groups are (i) horizontal linkages with other farmers groups (there are over 23,000 farmer groups in Nepal), (ii) training in aspects of marketing to empower them to seek market access, (iii) assistance in the gradual transformation of these groups into cooperatives, and (iv) ready access to alternative control measures such as of biopesticides.

Necessary conditions to make the programme achievements sustainable

To make the programme achievements sustainable the following will be required:

1. Active and competent research component (supply extension service with new ways of controlling pests)
2. Funding for research and extension service
3. A network of automatic agro-meteorological stations to develop models for prognosis and forecasting of local, regional and national pest outbreaks
4. Consideration of an area-wide approach to IPM to target entire communities of pest population in an agro-ecological region (pheromone disruption techniques, classical biological control, augmentation of natural enemies)
5. Increase in staffing levels at PPD for upscaling
6. Strengthen institutionalisation linkages with stakeholders
7. Clear division of roles and responsibilities amongst stakeholders
8. Linkage of IPM policy with pesticide regulations, marketing and infrastructure related policies
9. Subsidies on biopesticides, pheromones and alternatives to synthetic pesticides along with taxation on harmful synthetic pesticides to promote the shift to IPM
10. Focus on measures and infrastructure for sanitation and phytosanitation to increase domestic food safety and increased access to international markets
11. Exploration of other ways of disseminating IPM services such as hotline, SMS service, stronger online presence, etc.

Social-cultural and gender sustainability

There is a strong commitment in the programme to assure social inclusion. Among farmers, the programme has so far reached women and, to some extent, socially excluded people. The programme has, in fact, contributed significantly in certain districts to social involvement of women despite cultural constraints (e.g., among the *Madhesi* women). An increasing proportion of farmer facilitators and chair persons are women and from socially excluded groups. The continued involvement of women and socially excluded will depend on successful IPM techniques, access to markets for IPM products and successful operation of farmer groups and eventually cooperatives. Women involvement in government agencies is still very low due to the lack of female graduates in agronomy. Judged from the current enrolment in agricultural colleges, this situation is expected to improve in the next few years.
Normally, over 50 % of field school participants are women. Many women are also facilitators and group chairs. The traditionally socially excluded segments of the populations have been reached to a lesser extent because they are likely not to own land and are, therefore, less involved in farming.

Vulnerability to loss of key staff

Members of government staff are eligible for transfer after two years of service in any particular location. PPD has made repeated requests to the MoAC not to transfer IPM trained staff. The programme strategy is to train a relatively large number of DADO officers and JT/JTAs. The programme expects that it will be easier to start IPM promotion in new districts as trained staff will diffuse over the entire country as a result of the transfer process. Some trained staff may go abroad on a permanent basis. However, this number is small. To reduce the vulnerability of loss of staff at the village level, the programme has reduced the cost of training for junior technicians drastically by reducing the time of residential training from four months to 15 days. In this way the programme can afford to train a much higher number of staff. A similar reduction in cost of district officers has not been possible so far due to the lower number of persons involved. In the near future, however, district officers will have received IPM training at their respective colleges of graduation and thereby reduce the need for on-the-job training drastically.

6. IMPACT

Impacts of the programme have been assessed in relation to the logframe's indicators for goal and purpose (Appendix 1). Achievements of programme goals cannot, for apparent reasons, be quantified, but the team is of the opinion that the programme's contributions toward the specified goals are meaningful and real.

The programme's most significant impact has been three-fold: 1) Provided the government agencies and NGOs with proven, practical alternatives to chemical control of pests in crops; 2) established a general consensus within the line agencies from the ministry to the village councils, that IPM shall be the preferred policy for pest control; and 3) developed methodologies for farmer field schools that have been proven effective and efficient to bring about changes in the use of pesticides among farmers.

A fourth area of impact, the reduction of pesticide use and improved crop yields, has clearly been achieved but difficult to quantify. The 10,000 farmers who have reached directly through participation in the farmer field schools, may appear small compared to the 3.4 million farmers in the country. However, the programme has in addition reached an undisclosed number of farmers indirectly through training staff from NGOs and through providing them with effective IPM technologies. In addition, interviews with farmers indicate that transfer of IPM knowledge from trained to untrained farmers takes place in the villages. The number of beneficiaries reached, directly and indirectly, might, therefore, be in the range of 20,000 to 30,000. We should also keep in mind that the pesticide use in Nepal is strongly concentrated on vegetables, mustard and cotton in the Terai plain and in Kathmandu Valley and thus applied by a relatively small number of commercial farmers. The goal of significantly reducing the use of toxic pesticides, will, no doubt, be reached long before all of the three million farmers have been trained by the programme.

Important additional impacts of the programme among farmers and local administration are:

1. Organisation of field schools and transfer of IPM knowledge to farmers
2. Training of extension staff

3. Empowerment and organisation of farmers, particularly women and to some extent socially excluded groups with clearly expected effects on democracy, peace and nation building
4. Encouragement of farmers to connect to local administrators[13] and demand services and thereby making them accountable to the people
5. Horizontal cooperation of IPM farmer groups within villages and districts

Specific impacts at the national level are:

1. National policy for reduced pesticide use and implementation of IPM
2. Better institutional collaboration between research and educational institutions
3. Awareness and enthusiasm for IPM in government agencies
4. Awareness of IPM commodities and health among consumers

The methods for farmer field school that have been developed by the IPM programme, is now also being adopted in, e.g., livestock and fisheries. The impact of the IPM programme goes, therefore, far beyond pest control in crops.

7. PARTICULAR CONCERNS

Compliance with requirements for presentation of results

The assessment team is aware of recent discussions between the donor and the programme management regarding the format for reporting results. Requests for better reporting has lead to a rather detailed progress report for the last reporting period, July-Dec. 2011 (see report outline below). The reporting follows a normal format based on objectives, output, activities and financial status. The results are presented in a descriptive form in the first 60 pages, and Annex 1 presents the achievement in a tabular format based on the logframe table. Scores are recorded as either "fully", "partially" or "none" in Annex 1. This scale is rather coarse since the category "partially" can presumably mean anything between 10 % and 90 % fulfilment.
Outline of Progress Report for July – December 2011:

Both the descriptive and the tabular reports hold a common format for projects based on logframes, and thus, the reporting should in principle comply with Norwegian requirements. The programme management is, however, of the opinion that the request from the donor for

[13] The District Agricultural Development Office in Kavle is in regular contact with all FFS members collectively and individually over SMS as a result of the programme.

better reporting has led to excessive use of staff resources to prepare progress reports. The evaluation team finds the progress report to be massive, indeed, in terms of details.

Part of the controversy regarding the progress reports is probably a somewhat weak reporting on progress towards "institutionalisation", although the report contains chapters on this topic according to the logframe. The "somewhat weak" reporting on this issue appears to be a consequence of the institutionalisation objective being abstract and therefore difficult to quantify. Instead of describing institutionalisation as a phenomenon, the progress reports describe the activities done by the various institutions and thereby imply participation and consequently institutionalisation. The programme management shows a clear ambition of anchoring IPM firmly within all relevant institutions from the ministry to farmer groups.

Conflict sensitivity to the ongoing political process

The programme has shown a remarkable ability to stay neutral in the ongoing political process in Nepal. It has worked with operative institutions both centrally and locally to the extent possible to reach its objective – to train farmers in IPM. This has in part been possible due to the popular nature of the programme, particularly within the political reform movement.

8. CONCLUSIONS AND RECOMMENDATIONS

The National Integrated Pest Management Programme has over the past several years established the relevance of farmer field schools based ecological pest management to farmers and agricultural policy makers in Nepal. For its triple benefits on human health, food security and environment, this approach is now well accepted as a key pillar of agricultural development. There have been increased efforts towards institutionalisation of the project amongst the coordinating institutions, research and education institutions, support services, and farmer groups and farmer institutions. Recommendations made during the midterm review of Phase I have been followed up in Phase II of the programme. Moreover, the IPM programme has been able to implement its activities despite the political uncertainties nationally and at district level.

Integrated pest management is very popular at all levels in society from farming communities to the Nepalese Government. IPM is seen as a way towards poverty reduction, food security, increased food safety and protection of farmers' health and the environment. The IPM programme has been able to implement its activities despite the political uncertainties nationally and at district level.

Recommendations made during the midterm review of Phase I have been followed up in Phase II of the programme. Significant contribution to mainstreaming IPM policy has been made in the 2nd phase. There have been increased efforts towards institutionalisation of the project amongst the coordinating institutions, research and education institutions, support services, and farmer groups and farmer institutions.

Inputs, outputs and activities are found to be consistent with the logframe in support of the programme's objective, purpose and goal. The shift from quantity to quality by introducing whole-year training of farmers has been valuable, albeit raising some concern over cost. The

need for follow-up training in the second year has been recognized. The FAO pilot studies have provided important field experience and development of methods for conducting efficient farmer field schools. Farmer groups have been registered at the district administration with the intention to form cooperatives and thereby facilitate collective marketing of IPM products. This approach represents a new way of thinking when implementing IPM and is a very interesting contribution to the global discussions regarding sustainability and efficiency of IPM farmer field schools. Collaboration with investment projects in agriculture may assist in funding of supplemental inputs such as irrigation structures, roads, storage, etc.

The handing over from FAO to PPD is progressing well, but will be hampered by insufficient number of permanent staff in the PPD-IPM unit.

Development of modules for farmer field schools has made the IPM programme attractive amongst other donors and development organisations. The IPM programme has on several occasions been requested to train staff from governmental and non-governmental development organisations, not only in IPM but also in livestock and fisheries.

The current IPM programme attempts to build a national arrangement that will serve all partners working in the field of IPM. The value added by the Norwegian supported programme is already substantial and is likely to increase in terms of importance and scale as new agricultural development programmes become operational. The flexibility, result orientation and persistence of Norwegian support are appreciated by the Nepalese people.

The programme has clearly a democratic and peace-building impact in the sense that it empowers farmers, women and excluded people to demand services from the local and national administrations through education and village organisation. Farmers are enthusiastic and appreciative of the services provided by the programme.

Recommendations for the remaining period of Phase II

Since the programme is running well and is on track with respect to its logframe objectives, it is advisable to let the programme continue in its present form without major modifications.
However, as a field implementation programme with a large number of active partners, it faces some challenges. The management is fully aware of the challenges and has already taken steps in corrective directions. Desirable adjustments include:

1. Develop formalized collaboration with government investment programmes and NGOs in agriculture, either directly or through coordination by the District Development Committees, such that the IPM programme can focus on IPM while issues such as marketing, formation of cooperatives, storage, etc. can be supported by suitable partner programmes. Partner programmes will need to find a joint agenda and determine how common goals can be practically implemented.
2. Seek support and expertise from partner programmes on the establishment of commercial IPM value chains with focus on reliable and sufficient supplies of IPM products including formation of cooperatives with pick-up centres, storage and transportation.
3. Support farmer groups and private entrepreneurs in obtaining and processing input materials for biobotanicals, biopesticides and biofertilizers. Support commercialization of biopesticide production and trade.

4. Continue scaling up of farmer training: First priority given to farmers in vegetable producing areas near large cities where the demand for IPM products is already high and farmers producing crops for export (tea and fruit); second priority to farmers in the non-intensive districts through existing government funding allocated to the District Development Committees.
5. Continue scaling up of training for junior technicians and junior technician assistants stationed in the districts until more college graduates with IPM training become available.
6. Seek registration and formal arrangements for farmer facilitators within the local administration.
7. Work more closely with District Development Committees when the political situation stabilizes in the districts.
8. Convert temporary positions at PPD to permanent positions; add professional staff to correct the currently low capacity.
9. Consider reducing the level of details presented in the progress reports to make them easier to comprehend.

Recommendations for a potential Phase III

Considering the challenging situation that the new government of Nepal is facing both in terms of the ongoing peace building process and financial constraints, the review team finds continued support beyond the second phase of the IPM programme to be commendable with necessary adaptations. The government has shown strong commitment to incorporating IPM in its policies as well as supporting the programme financially. Within the next few years, it is nevertheless, unlikely that the IPM programme can continue its positive development without continued external funding.

Consequently, a Phase III should be considered for Norwegian support to capitalize on past investments. The programme is in demand and its impact on food production, human health and the environment will increase in the future. Planners of a potential new phase should consider the following options:

1. Lift the formal responsibility of the programme to the Department of Agriculture and thereby bring in all relevant directorates – not only PPD – as formal members of the implementation team. PPD should remain as focal point for IPM technologies.
2. Connect the IPM programme formally to existing and planned investment programmes in agriculture to provide funding for investments that are essential for implementing IPM but go beyond the scope of pest control, such as formation of cooperatives, marketing, irrigation, storage, roads, etc.
3. Maintain the IPM programme as a *thematic focus programme* with a clear mandate to deliver technologies for pest control and not spread out as a comprehensive programme for agricultural development.
4. Restrict the availability of harmful synthetic pesticides:
    - Introduce classified taxation on synthetic pesticides following the WHO toxicity classes/environmental index quotient or similar, to promote the shift to less harmful pesticides and alternatives to synthetic pesticides
    - Ban the most toxic pesticides currently available in Nepal (class Ia and Ib).
    - Collect and destroy banned pesticides
    - Impose import control and restrictions
    - Remove subsidies on harmful pesticides

- Update regulatory frameworks for agrochemicals and phytosanitary measures and strengthen the regulatory institutions

5. Promote domestic production of biopesticides and natural enemies by:
    - Supporting research to find efficient strains and biotypes for different agroecological zones in Nepal
    - Subsidizing commercial production of these organisms to promote the shift to IPM
6. Implement sanitation and phytosanitation measures to increase domestic food safety and increased access to international markets
7. Fund an active and IPM research component
8. Develop a network of automatic agro-meteorological stations and develop models for prognosis and forecasting of local, regional and national pest outbreaks
9. Establish an area-wide approach to IPM to target entire communities of pest populations in agro-ecological regions (pheromone disruption techniques, classical biological control, augmentation of natural enemies).
10. Continue arranging farmer field schools and transfer of IPM knowledge to farmers
11. Continue training of staff at PPD and in the district administrations
12. Create awareness of IPM-commodities among consumers

APPENDIX 1. ASSESSMENT OF ACHIEVEMENTS BASED ON LOGFRAME INDICATORS

COMMON GOALS AND OBJECTIVES FOR BOTH THE GOVERNMENT AND FAO COMPONENTS

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	SOURCES OF VERIFICATION	*ASSESSMENT BY MIDTERM EVALUATION TEAM*
GOAL: To contribute to sustainable broad-based poverty reduction and food security while contributing to human health and environmental protection	1. Improvement in land quality and biodiversity 2. Increased profitability of smallholder crop production; 3. Reduce incidence of harmful effects of hazardous agro-chemicals on human health and environment	National and local government statistics. Independent impact assessment studies. Midterm and technical reviews.	*Programme goal is in line with Norway's general priorities for development assistance, and consistent with priorities for Nepal (energy, education and environment) to the extent the programme can be seen as an environmental and educational endeavour.* *Data for indicators are not available.*

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	SOURCES OF VERIFICATION	*ASSESSMENT BY MIDTERM EVALUATION TEAM*
PURPOSE: To build on the existing institutional and programme strengths acquired by Nepal, both in the governmental and non-governmental sectors To scale up IPM programme in commercialization of agriculture covering selected districts of Nepal **OBJECTIVES:** • To contribute to institutionalize a sustainable national IPM Programme in Nepal by strengthening the capacity of PPD, collaborating national, regional and district level training and extension institutions in the government and non-government sectors to integrate IPM training and support programme for small holder farmers. • To empower rural farmers including women to increase production and productivity efficiently, while protecting the environment, conserving the bio-diversity and avoiding health hazards for betterment of their livelihood and linking with markets **OUTCOME:** National IPM Programme institutionalized and supporting community-based sustainable agriculture	1. Separate IPM unit with full-time personnel established within PPD 2. FFS training and follow-up capacity exists within DADOs and other institutions 3. IPM-FFS activities coordinated on national, regional and district levels 4. Graduates from educational institutions able to implement IPM-FFS without further training 5. IPM-FFS integrated in the technology development of research institutions 6. Self-reliant smallholders and farmers' groups/ associations/cooperatives have access to market information and technical support 7. Scaling up of programme is in pace with available capacity and maintains quality of farmer education	Localized case studies together with programme impact assessment reports Related research findings of concurrent agricultural and rural development programmes Minutes of coordination committees meetings Institutional records and reports Project Progress Reports	*1. IPM unit established, but three staff members on loan from other directorates.* *2. Satisfactory* *3. Satisfactory* *4. Satisfactory* *5. Satisfactory for IAAS, CTEVT and HICAST, but not for NARC* *6. Satisfactory progress, but much remains to make a substantial impact nationally* *7. Satisfactory progress, but scaling up needs continued attention*

OUTPUTS AND ACTIVITIES OF THE PPD COMPONENT

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	SOURCES OF VERIFICATION	*ASSESSMENT BY MIDTERM EVALUATION TEAM*
OUTPUTS: 1. The National IPM Programme is well institutionalized and fully functional	1. Coordination meetings on all levels take place regularly and actively contribute to project implementation 2. Roles and responsibilities of National IPM Programme owned and adopted by the collaborating and cooperating institutions 3. Timely support services to the farmers ensured, systematized and mainstreamed	Records of contributions by different institutions Minutes of Coordination Committee meetings Proceedings and publications Project Progress Reports	1. Satisfactory 2. Satisfactory 3. Satisfactory progress

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	SOURCES OF VERIFICATION	*ASSESSMENT BY MIDTERM EVALUATION TEAM*
2. *Existing IPM training capacities are maintained and enhanced in all districts*	1. All previously trained officers and JT/JTA are assigned activities under the Programme 2. Previously established FFS are continuing IPM related activities 3. Farmers advocate their interests in the supported districts 4. Increased participation of women and socially excluded people	FFS records and annual FFS summary reports for districts and regions Feedback from IPM-FFS alumni group and observations of steering committee members and stakeholders Independent impact studies of farm household surveys News reports on field days and farmer congresses Project Progress Reports	*1. Satisfactory* *2. Satisfactory* *3. Satisfactory* *4. Satisfactory*

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	SOURCES OF VERIFICATION	*ASSESSMENT BY MIDTERM EVALUATION TEAM*
3. *Information on the use and impact of pesticides is available and reflected in national policies*	1. Accurate pesticide use statistics are available 2. Information on the extent of pesticide poisoning use available. 3. Pesticide Act is enforced and new policies and regulations are formulated and implemented 4. Country specific policy for IPM and sustainable agriculture formulated 5. Decrease in use of harmful pesticides 6. Project achievements and impact results are known to policy-makers and stakeholders	Special studies on the effect of pesticide use on environment, health and residues Policy statements and new regulations Independent impact assessment studies Project Progress Reports	*1. Import statistics is available and two surveys have been done. Use is less well known.* *2. Not to our knowledge* *3. New act approved and policy under approval. Implementation might be a problem.* *4. Satisfactory* *5. Possibly decreasing, but toxic pesticides like endosulfan and dimethoa are still on the list of available pesticides* *6. Satisfactory*

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	SOURCES OF VERIFICATION	*ASSESSMENT BY MIDTERM EVALUATION TEAM*
Activities 1. *The National IPM Programme is well institutionalized and fully functional* • Coordinate, plan, implement and monitor the National IPM Programme in Nepal at central, regional and district levels. • Coordinate and link with all stakeholders of the National IPM Programme from GOs, I/NGOs, Research institutions, likeminded programmes, universities, private sectors and farmers institutions; • Strengthen capacity of relevant institutions from GOs and NGOs by providing post graduate fellowships and research grants; • Assist in the development of curricula for technical and higher education institutions and SC board that reflects the experiences and needs of IPM-FFS; • Incorporate the Participatory IPM approach in a phased wise manner into regular agricultural training, extension and support programmes both at central level and decentralized entities;	1. Scheduled Meetings of NCC, RCC and DCC 2. Residential training for 24 officers completed by 2009 3. Training of 75 JT/JTA and 120 farmer facilitators in key districts completed by 2010 4. Training curricula in schools, institutes and universities reflect IPM-FFS experiences by the end of the project (IAAS, HICAST, CTEVT and Secondary Education Board) 5. FFS internship opportunities to 12 person 6. Opportunities to attend refresher courses for 450 persons (75 officers,75 JT/JTA, 300 farmers) 7. Support for post graduate courses for 10 person 8. Contracts for 6 research studies 9. 3 National, 10 Regional, 260 District workshops 10. 15 domestic exchange visits for the FFS groups	Project and institutional records Training plans, reports and attendance records IPM-FFS Facilitator database Training quality surveys Internship reports Higher education theses Project Progress Reports	*1. Satisfactory* *2. Satisfactory* *3. Satisfactory* *4. Satisfactory* *5. Satisfactory* *6. Satisfactory* *7. Satisfactory* *8. Satisfactory* *9. Satisfactory* *10. Satisfactory*
2 Existing IPM training capacities are maintained and enhanced in all districts • Maintain existing training capacities and create platform for the replication of the FAO developed modules on intensi-fication and institutionalization of IPM in the remainder of the districts; • Initial focus on rice IPM activities with gradual intensification and institutionalization of IPM using modules and methodologies developed by FAO in more districts; • Strengthen capacities of PPD outfits at regional and central levels, relevant research institu-tions and universities to support the farmers initiatives in IPM	1. By the end of the project 500 FFS for ~12,000 farmers conducted and farmers organized in 500 groups 2. Field days implemented to rally for community support 3. 20 participatory field research in collaboration with NARC 4. Intensification and institutionalization activities initiated in 5 districts	Annual FFS implementation plans FFS records and FFS database Self-monitoring records and feedback	*1. This target assumed that all 9 wards in each VDC would be included. However, only 3-4 wards in each VDC were feasible to include due to natural settings. Therefore, the number of FFS and farmers are proportionally lower.* *2. Satisfactory* *3. Satisfactory* *4. Satisfactory*

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	SOURCES OF VERIFICATION	*ASSESSMENT BY MIDTERM EVALUATION TEAM*
3. Information on the use and impact of pesticides is available and reflected in national policies • Conduct pest risk analysis and pesticide risk mapping and asses the extent of pesticide poisoning and patterns of pesticide use reduction in the country; • Formulate national policies in support of community based IPM and sustainable agriculture;	1. Baseline data collected in 2009 2. Post-training impact data collected in 2009 and 2011 3. 8 contracts for special studies issued 4. Databases regularly updated and periodically analyzed 5. Special reports issued in a timely manner 6. Regular Progress reports submitted as scheduled	Minutes of regular programme planning, steering and management meetings Minutes of Coordination Committee Meetings Reports on policy meetings and briefings	*1. Satisfactory, published in 2011* *2. Satisfactory* *3. Satisfactory* *4. Satisfactory* *5. Satisfactory* *6. Satisfactory*

OUTPUTS AND ACTIVITIES OF THE FAO COMPONENT

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	SOURCES OF VERIFICATION	*ASSESSMENT BY MIDTERM EVALUATION TEAM*
OUTPUTS: 1. Institutional capacities to provide pre- and in-service training in IPM-FFS are enhanced	1. Scaled up capacities for intensification and institutionalization of IPM in 12 districts. 2. Pre-service IPM-FFS training embedded in curricula of schools, institutes and universities. 3. In-service IPM-FFS training involves training institutes and NGOs, where appropriate 4. IPM curricula revised to focus on general IPM principles, supplemented by crop-specific IPM tools as well as good local agricultural practices for IPM products 5. FFS curricula revised to strengthen facilitation skills, group organization, social inclusion and women empowerment 6. Learning aid and education materials available on environment pollution, healthy crop production and marketing of healthy commodities 7. Opportunities available for internships and higher studies in IPM related disciplines	Records of training outputs by different institutions Operation manuals for FFS and follow-up activities for different local conditions and cropping systems Ecological IPM guides for different crops Case study observations on attitude and aptitude of IPM-FFS facilitators Proceedings and publications Project Progress Reports	*1. Satisfactory* *2. Satisfactory* *3. Satisfactory* *4. Satisfactory* *5. Satisfactory* *6. Satisfactory* *7. Satisfactory*

NARRATIVE SUMMARY	**OBJECTIVELY VERIFIABLE INDICATORS**	**SOURCES OF VERIFICATION**	***ASSESSMENT BY MIDTERM EVALUATION TEAM***
2. IPM-FFS farmer groups trained and organized to promote community-based sustainable agriculture	1. IPM-FFS alumni groups show ownership and networking at local and district level 2. Production efficiency and farm incomes increased among IPM-FFS farmers as a result of better decision making capacity 3. Decrease in use of harmful pesticides 4. Increase in farmer-led field studies and action research that results in new knowledge and technologies 5. Farmers advocate their interests and take greater control of their lives 6. Increased participation of women and socially excluded people	FFS records and annual FFS summary reports for districts and regions Feedback from IPM-FFS alumni group and observations of steering committee members and stakeholders Independent impact studies of farm household surveys Case studies on successful IPM-FFS alumni groups News reports on field days and farmer congresses Project Progress Reports	*1. Satisfactory* *2. Satisfactory* *3. Satisfactory* *4. Satisfactory* *5. Satisfactory* *6. Satisfactory*

NARRATIVE SUMMARY	**OBJECTIVELY VERIFIABLE INDICATORS**	**SOURCES OF VERIFICATION**	***ASSESSMENT BY MIDTERM EVALUATION TEAM***
3. Support services for farmer groups result in optimized appropriated technologies, more efficient production and better access to markets	1. Farmers aware of and accessing DADO, NGO and private sector support services 2. Increased interactions be–tween research institutions and farmer groups 3. Increase in crop-specific IPPM tools 4. System for organized pro–duction, certification and marketing of healthy crop 5. Good local agricultural practice standards for IPM products available and practiced by community groups 6. Increased opportunities for smallholders to respond to market forces	Relevant research findings and reports on adoption of new IPPM technologies Publications of practical guidelines for good local agricultural practice standards and marketing procedures Proceedings and minutes of meeting Mission statements, management arrangements and individual job descriptions Project Progress Reports	*1. Satisfactory* *2. No information* *3. Satisfactory* *4. Satisfactory* *5. Satisfactory* *6. Satisfactory*

NARRATIVE SUMMARY	**OBJECTIVELY VERIFIABLE INDICATORS**	**SOURCES OF VERIFICATION**	***ASSESSMENT BY MIDTERM EVALUATION TEAM***
4. An information and coordination system is in place to monitor progress, support policy and ensure transparency and accountability	1. Project achievements and impact results are known to policy-makers and stakeholders 2. Information on the extent of pesticide poisoning and of the actual pattern in reduction of pesticide use available. 3. Transparency and accoun-tability in programme implementation assured 4. Stakeholders empowered to register grievances/–complaints and to assume joint responsibilities 5. New policies in support of community-based sustainable agriculture formulated and implemented	Independent impact assessment studies Special studies on environment, health and residues Case studies Periodic analyses of project databases made available to coordination committee meetings Minutes of coordination committee meetings Policy statements of other stakeholders Project Progress Reports	*1. Satisfactory* *2. Satisfactory* *3. Satisfactory* *4. No information* *5. Satisfactory* *6. Satisfactory*

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	SOURCES OF VERIFICATION	*ASSESSMENT BY MIDTERM EVALUATION TEAM*
Activities *1.* ***Pre- and In-service Training Capacity*** • Curriculum Development for TOF, Refresher Courses (Officer, Non-Officer and Farmers) and Year round FFS • Train of up to 24 IPM Facilitators (TOF-Officers) at DADO level in TOF training for JT/JTA and farmer trainers, backstopping and M&E • Train of up to 220 farmer facilitators (TOF-farmers) in IPM-FFS and community mobilization • Train of up to 120 JT/JTA facilitators (TOF-JT/JTA) at the district/ASC levels in IPM-FFS, backstopping and M&E • Organize district facilitators practicum to upgrade the knowledge and skills (up to 48 courses) • Organize international study tours/policy level observation tours (for 25 persons) • Organize refresher course for IPM-FFS facilitators (officers, technicians and farmers) to share and upgrade their skills/knowledge. • Provide internship opportunities for students to gain experience in IPM-FFS • Provide opportunities for students to conduct IPM-FFS related research • Create awareness of the need for quality farmer education and further institutionalization. • Assist in the development of curricula for technical and higher education institutions that reflect the experiences and needs of IPM-FFS	1. Revised curriculum available for TOT, Refresher courses and year round FFS for farmers 2. All residential training for officers completed by 2009 3. Training of JT/JTA and farmer facilitators in focussed districts completed by 2010 4. Training curricula in schools, institutes and universities reflect IPM-FFS experiences by the end of the project 5. Opportunities to attend refresher courses available	Project and institutional records Training plans, reports and attendance records IPM-FFS Facilitator database Training quality surveys Internship reports Higher education theses Project Progress Reports	*1. Satisfactory* *2. Satisfactory* *3. Satisfactory* *4. Satisfactory* *5. Satisfactory*

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	SOURCES OF VERIFICATION	*ASSESSMENT BY MIDTERM EVALUATION TEAM*
2 Sustainable Farmer Groups • Orient district technical team and stakeholders on the programme procedures in 12 districts • Identify potential villages in cluster areas with priority crops, collect base line information and prepare long, medium and short term plan of project interventions in the selected village/cluster • Provide year-long training to up to 500 farmer groups in general IPM principles and application of crop-specific IPM tools • Encourage and strengthen participatory IPM technology development and adaptation (up to 1,250 Post FFS follow up support FFS groups) • Encourage groups to organize in alumni groups/ association/cooperatives • Disseminate and share farmer field research results through farmers' practicum (up to 66) • Organise exchange visits for farmers and facilitators (up to 3 visits) • Collect and publish case studies of farmer field research • Set-up system for self-assessment of progress, incl. programme effects on pesticide poisoning • Design and introduce mechanism for collection feed back and grievances to ensure transparency and accountability in programme support	1. Seasonal and annual village level programme review, planning and implementation cycle adopted by the farmers in each focussed village/ cluster of 12 districts 2. By the end of the project 500 FFS for ~12,000 farmers conducted (up to 45 per district) 3. Post FFS follow up support to FFS groups to optimize production and pest management practices 4. Seasonal and annual field days implemented to rally for community support 5. Exchange visits to other districts 6. FFS groups organized in FFS alumni/association/-cooperatives and support services to the farmers institutionalized in 12 districts 7. Annual farmer practicum bring together IPM-FFS farmers in a district 8. Mechanism for trans-parency and accountability in programme implemen-tation	Base line information/data, Long, medium, immediate and Annual FFS implementation plans FFS records and FFS database Self-monitoring records and feedback	*1. Satisfactory* *2. Satisfactory* *3. Satisfactory* *4. Satisfactory* *5. Satisfactory* *6. Satisfactory* *7. Satisfactory* *8. Satisfactory*

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	SOURCES OF VERIFICATION	*ASSESSMENT BY MIDTERM EVALUATION TEAM*
*3. **Support Services*** • Assist farmers with pest problem identification, natural and biological pest control practices and the use of botanical pesticides • Train and follow up selected farmers groups in rearing and production potential biological agents/natural enemies • Provide training and follow up support to enhance the organizational and managerial capacity of the alumni groups/–association/cooperatives • Develop good local agri–cultural practice standards and introduce self certifi–cation scheme for IPM products • Assist farmers in the marketing of IPM products • Organize awareness raising programmes on IPM and IPM products	1. Consultant visits scheduled for appropriate times 2. Support made available for farmer-oriented research contracts 3. Contracts for special support services issued and specialized trainings 4. Good local agricultural practices and self certification system for IPM products available 5. Farmers able to rear, produce and supply to the fellow farmers bio-agents/natural enemies for biological control 6. Marketing places of IPM products and quantity IPM products produced and supplied	Support services implementation plans Published GAP standards Attendance records	*1. Satisfactory* *2. Satisfactory* *3. Satisfactory* *4. Satisfactory* *5. Satisfactory effort* *6. Satisfactory efforts, but obstacles met*

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	SOURCES OF VERIFICATION	*ASSESSMENT BY MIDTERM EVALUATION TEAM*
*4. **M&E System*** • Develop a culture of impact assessment and self evaluation on local, district, regional and national levels • Set-up a reporting system and data bases to monitor progress in IPM-FFS implementation • Assist in the monitoring of Code of Conduct for pesticide use and pesticide residues • Assess project impact on farm income, health, agro-biodiver-sity, as well as human and social capacities • Document and disseminate successful procedures • Provide transparency and accountability by involving all stakeholders in project coordi-nation and oversight • Empower IPM-FFS farmer groups to advocate their needs and interests for effective programme implementation	1. M&E plan formulated and regularly updated 2. Consultant visits scheduled for critical periods 3. Baseline data collected in 2009 4. Post-training impact data collected in 2009 and 2011 5. Contracts for special studies issued 6. Databases regularly updated and periodically analyzed 7. Key managers and technicians exposed to information and involved in debate 8. Special reports issued in a timely manner 9. Regular progress reports submitted as scheduled	M&E plans Reports on monitoring and backstopping visits Minutes of regular programme planning, steering and management meetings Minutes of Coordi-nation Committee Meetings Reports on policy meetings and briefings Newsletters, publi-cations, website updates Accounts and audit reports	*1. Satisfactory* *2. Satisfactory* *3. Satisfactory, published in 2011* *4. Satisfactory* *5. Satisfactory* *6. Satisfactory* *7. Satisfactory* *8. Satisfactory* *9. Satisfactory*

APPENDIX 2. PROJECTS AND PROGRAMMES IN NEPAL WITH RELEVANCE TO THE IPM PROGRAMME

Five of the donor-funded programmes with an IPM component are outlined below.

1. Government of Nepal, Ministry of Irrigation, Department of Irrigation: Modernization of Rani Jamara Kulariya Irrigation Scheme Phase I

The main objective of Phase I is to improve irrigation water delivery to and management in the project's command area. In addition, the project intend to train the farmers on the harmful effects of pesticides, benefits of green manure and compost, IPM, integrated plan nutrient management (IPNM), organic farming, medicinal-herb cultivation, etc. Such programmes are expected to enhance the awareness level of the farmers resulting in decreased use of harmful chemicals.

2. International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and the World Bank: Traditional Technology with a modern Twist.

Programme components:

- Establishment of *Helicoverpa* nucleopolyhedrosis virus units
- Strengthening national agricultural research institutions
- Organizing participatory rural appraisal
- Interaction with farmers
- Development of extension material
- Studies on the impact of this project through
- Strengthening the strategic research by developing effective NPV monitoring technology

Project location	India and Nepal (8 Terai districts in Nepal)
Start	June 2005
Completion	May 2007
Value	USD 150,000

3. Center for Environmental and Agricultural Policy Research, Extension and Development (CEAPRED): Integrated Pest Management-Collaborative Research Support Program (IPM-CRSP)

Description of project

- Evaluation of effective pheromones and traps in IPM CRSP project districts
- Performance of bio-fertilizers and biopesticides
- Verification of various proven IPM tools (bagging, farm yard manure, mulching, neemcake, solarization and grafting)

Description of services provided

- Farmers aware about the use of pheromones and traps and its positive impact upon the health, environment and biodiversity of beneficials.
- Minimize the use of chemical fertilizers and pesticides on vegetables and commercial crops.
- The bio-fertilizers and biopesticides with farmers practice (chemical fertilizers and pesticides) for their effectiveness in terms of yield, cost and benefits.
- Keep the soil healthy and maintain the bio-diversity.
- Make the farmers aware about the use and importance of the technologies like grafting.

- Improve the soil condition by improving the soil moisture and controlling the soil erosion by providing suitable ground cover.
- Accelerate biological and physiological activities of plants to increase the yield of the crop.

Project location	Rupendehi and Lalitpur
Professional staff	3
Name of client/donor	IDE via USAID
Start-complete date	February 2010 - September 2012
Approximate value of service	10,000 USD

4. Centre for Development Innovation (CDI), Wageningen University & Research Centre: Integrated Pest Management Trainers Association in Nepal (TITAN) Capacity Enhancement Project.

A description of the programme is not available.
Period: 2007 – 2008
Funding: not reported
Purpose: Trainers of TITAN and their partners were introduced to theoretical and practical aspects of biological control to be used in participatory IPM extension approaches.

5. Caritas, Australia: Integrated Pest Management Programme

The programme strengthens local partners and networks to promote IPM, to market agricultural produce, and to facilitate networks at various levels to advocate for farmers' rights (seed rights, land rights and food sovereignty issues).
Over the course of this 3-year programme, 8,575 small-scale farmers will be organised and trained in 343 FFS groups for IPM in rice and/or vegetables. Fifty percent of participants will be from discriminated groups (ethnic groups and low castes) and 60 percent will be women. Participants are selected based on specific economic, social and environment deprivation criteria.
Issues: Food security and agriculture; Water and sanitation
Partner agency: Caritas Nepal
Funding in 2011/12 financial year: US $235,000
Geographic location: 23 districts in Nepal
Established: 2009

In addition two bilateral development projects might be of particular relevance as collaborating partner for the IPM programme:

1. HELVETAS: Sustainable Soil Management Programme (SSMP)

Targets improvements in soil fertility and productivity in bari-dominated farming systems in the mid hills of Nepal with the aim of increasing food production, food security and farm incomes. Special activities target the ultra-poor population in the selected areas. Implemented in 10 districts in three clusters (far west, west and east) in a decentralized manner, and focuses on consolidation, expansion, institutionalisation and reaching the disadvantaged. During 2009, 47 local collaborating institutions, comprising both local NGOs and government offices, in 10 mid-hill districts promote SSM with financial and technical support from SSMP. As of January 2009, over 9,600 farming households, belonging to nearly 1000 farmer groups, from 51 VDCs, will participate in the promotion

of SSM practices such as improved manure management, urine as liquid fertilizer, use of biopesticides, integration of legumes into the farming system, fodder promotion for livestock, vegetables and cash crop production, and farmer field schools on integrated plant nutrient management.

2. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH: Improvement of Livelihoods in Rural Areas (ILRA) (2009-2012)

   Executed under the Ministry of Peace and Reconstruction (MoPR). The project works with poor and marginalised households in 28 communities in Baitadi and Bajhang Districts in the Far West Region, focusing on infrastructure, agricultural and non-agricultural income and social issues. In another 33 communities, the project makes use of the resources provided by FAO in agriculture alone. A community-based approach ensures that all social groups are involved in the measures. The project created temporary jobs for over 16,000 people who were paid for their work with rice, legumes and cash. This income enabled them to secure self-sufficiency in food for up to three months longer. In addition 10,000 families received vegetable seeds and completed a training course on their cultivation.

APPENDIX 3. FIELD WORK ITINERARY

Date	Activity
06.02.12	• Neelam Pradhananga started collection of reports and documents
08.02.12	• Hemant Ojha started review of documents
12.02.12	• Arrival of Kjell Esser
13.02.12	• Holiday: Meeting with PPD and FAO programme directors and staff
14.02.12	• FAO • CARITAS • CEAPRED • HELVETAS (Sustainable Soil Management Programme) • HELVETAS (Coffee Promotion Programme)
15.02.12	• PPD Director and PPD team • Directorate of Agricultural Training • CTEVT • HICAST
16.02.12	• NARC; Executive Director and Dorector (Planning and Coordination/Principal Scientist) • Tripartite Meeting in Hotel Himalaya
17.02.12	• Directorate for Agricultural Extension • Ministry of Agriculture and Cooperatives; Secretary • PPD Director and PPD team • Departure of Hemant Ojha
18.02.12	• Saturday
19.02.12	• Holiday
20.02.12	• Holiday • Arrival of May-Guri Sæthre
21.02.12	• Travel to Dhulikhel, Kavre • DADO Kavre; Senior Agricultural Development Officer • Travel to Mahadevsthan • FFS group
22.02.12	• Travel to Tanahu
23.02.12	• Travel to Damauli • DADO, Tanahu • Kyamin Village Development Committee • FFS group • Travel to Birjung
24.02.12	• Travel to Bara Kaliya • SADO Kaliya, Bara • Travel to Bhalubharbaliya • FFS visit • Travel from Birgunj to Sauraha
25.02.12	• Saturday
26.02.12	• IAAS Rampur, Chitwan • Visit to Bharatpur FFS Group • Regional Network Office • DADO, Chitwan; Senior Agricultural Development Officer • FFS East Chitwan (regular programme)
27.02.12	• Travel to Kathmandu
28.02.12	• PPD, Director and National Coordinator (IPM Programme)
29.02.12	• FAO; Acting Rep. • National Planning Commission
01.03.12	• Preparation for debriefing
02.03.12	• Debriefing; Norwegian Embassy

	• Debriefing; MoAC, Secretary and staff (MoAC, PPD, FAO)
03.03.12	• Departure May-Guri Sæthre and Kjell Esser

APPENDIX 4. LIST OF CONSULTED PERSONS

Coordinating Institutions

Ministry of Agriculture and Cooperatives (MoAC)
Mr Nathu Prashad Chaudhary, Secretary

Department of Agriculture (DoA)
Dr. Shyam Kishor Sah, Director General

National Planning Commission Secretariat
Mr Biju Kumar Shrestha, Programme Director
Mrs Rudra Devi Sharma, Planning Officer

Food and Agriculture Organisation of the UN (FAO)
Dr Lin Aung, FAO Representative to Nepal/WHO Representative to Nepal
Dr Binod Saha, Assistant FAO Representative/former National IPM Programme Manager
Mr Ganesh KC, Institutional Support Expert/Former Secretary, MoAC
Mr Buddhi Lal, Chaudhary Monitoring and Evaluation Specialist
Mr. Shrawan Adhikary, Programme Officer
Mr. Ramesh Poudyal, Group Strengthening & Agro Enterprise Development Specialist
Mr. Arjun Thapa, Programme Officer
Mr. Mandip Rai, Programme Officer

Plant Protection Directorate (PPD)
Dr Yubak GC, PPD-Director/Programme Director and National Coordinator
Dr Vrigu Rishi Duwardi, IPM Training Specialist, National IPM Programme
Mr Sahadev Prasad Humagain, Senior Plant Protection Officer, IPM Unit
Mr Kalika Prasad Koirala, Horticulture Development Officer, IPM Unit
Mr Keshav Rai Kafle, Plant Protection Officer, Planning and Monitoring Section
Mr Ramesh Paudyal, Expert Marketing
Mr Sunita Pathak, JT, IPM Unit
Mr Manoj Pokhrel, Plant Protection Officer, IPM Unit
Mr Manan Chaudhary, JT, IPM Unit
Mr Ramesh Poudyal, Group Strengthening and Marketing Expert, National IPM Programme

District Agricultural Development Offices/Support Services Institutions
DADO Kavre [names unavailable]

DADO Tanahun
Danada Pani Khanal, Senior Agricultural Development Officer

DADO Chitwan
Jagannath Tiwari, Senior Agricultural development officer

Other Government Institutions
Directorate of Agricultural Trainings (DAT)

Directorate of Agricultural Extension (DAE)
Dr Siddhi Ganesh Shrestha, Director

Research Institutions
Nepal Agriculture Research Council (NARC)

Dr Dil Bahadur Gurung, Executive Director
Dr Baidya Nath Mahto, Director, Planning and Coordination/Principal Scientist (Plant Pathology)
Mr. Kailash Pd. Bhurer, Regional Director, Bara

Education Institutions
Institute of Agriculture and Animal Science (IAAS Rampur)
Prof. Sundar Man Shrestha, Dean
Prof. Resham Bahadur Thapa, Assistant Dean (Academics)
Prof. Dharma Raj Dangol, Dep. Of Environmental Science
Mr Sundar Tiwari, Assistant Professor
IAAS Students

Himalayan College of Agricultural Sciences and technology (HICAST)
Bishnu Prasad Bhattarai, Coordinator/Assoc. Professor

Council for Technical Education and Vocational Training (CTEVT)
Tara Sharma Luitel [What was his position?]
Shiva Shankar Ghimire, Director, Curriculum Development Division
Dr Jay Bahadur Tandan, Member Secretary

NGOs
Helvetas Nepal (Sustainable Soil Fertility Management Programme – SSMP)
Rudriksha Rai Parajuli, Team Leader – SSMP
Shiva Krishna Shrestha, Senior Programme Officer
Bishnu Bishwakarma, Programme Officer

Coffee Promotion Project (CoPP)
Bhola Kumar, Team Leader
Ranjane Mishra, Officer

CARITAS Nepal
Manindra Malla, Programme Manager
Ananda Pyakurel, Programme Assistant
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Dr. Luke A. Colavito, Country Director

Farmer Group and Farmer Institutions
Kavre IPM groups
Tanahun IPM groups
Bara IPM groups
Chitwan IPM groups

IPM District Farmers' Association
IPM Regional Farmers' Association

APPENDIX 5. TERMS OF REFERENCE

Terms of Reference
for
Review of the Integrated Pest Management Programme, Phase II
(2008-2013)
28 September 2011

1. Background

Norway has supported the Integrated Pest Management Programme in Nepal since 2003. The programme has a clear linkage to past regional IPM projects in Asia and Nepal, and is conducted in close interaction with the primary beneficiaries – the small scale farmers.

Plant Protection Directorate (PPD) under the Department of Agriculture in MoAC is responsible for the implementation of the programme.

The field level of the programme is implemented through farmer's field schools. At these schools the farmers receive training in IPM and cultivation methods with less use of pesticides, something that will improve food security and food safety. It also includes training of new facilitators locally, preparation of materials and support to farmer's organisations. All these activities are expected to contribute to empowerment of farmers and communities.

The mid-term review conducted spring 2006 gave recommendations for a second phase in order to extend the programme to all districts and to more crops than rice, and also to build a national system of well trained government service staff and managers as well as informed politicians contributing to creating an enabling environment that encourage farming communities to adapt to biological/ecological-based pest management.

The second phase of the programme is focusing on consolidation, up-scaling and institutionalisation to ensure a national support system, including NGOs, universities and the government sector. A transfer of responsibilities from FAO to the Government is intended in phase II.

The target beneficiaries of the programme are primarily the local communities in all 75 districts. The direct beneficiaries are the small-scale farmers, including targeted women farmers and socially excluded groups.

The overall programme **goal** is to *"contribute to sustainable broad-based poverty alleviation and food security while contributing to human health and environmental protection"*.

Towards this goal the programme's **immediate objectives** are:

> (i) To contribute to institutionalise a sustainable national IPM in Nepal by strengthening the capacity of the PPD, collaborating national, regional and district level training and extension institutions in the governmental and non-governmental sector to integrate IPM training and support programme for smallholder farmers; and

(ii) To empower rural farmers, including women, to increase production and productivity efficiently, while protecting the environment, conserving the bio-diversity and avoiding health hazards for betterment of their livelihood and linking with markets.

The programme is designed with an FAO component with four outputs and a Government component with three outputs, as shown in Table 1.

Table 1. *Programme budget and outputs.*

Government component ("regular") Budget: USD 1,6 million	FAO component ("intensive") Budget: USD 3,4 million
Output 1: The National IPM programme is well institutionalised and fully functional. Output 2: Existing IPM training capacities are maintained and enhanced in all districts. Output 3: Information on the use and impact of pesticides is available and reflected in policies.	Output 1: Institutional capacities to provide pre- and in-service training in IPM-FFS are enhanced. Output 2: IPM-FFS alumni groups trained and organized to promote community-based sustainable agriculture. Output 3: Support services for farmer groups resulting in optimised appropriate technologies, more efficient production and better access to markets. Output 4: An information and coordination system in place to monitor progress, support policy and ensure transparency and accountability.

2. Purpose of the review

The overall purpose of the review is to **i**) assess the programme performance against the target **ii**) give the foundation for a decision based on possible corrective measures for the rest of the programme period.

In particular, the review shall assess the progress of the immediate objective of **institutionalisation**. Institutionalisation should be assessed for the following five topics: Coordinating Institutions, Research Institutions, Education Institutions, Support Services Institutions and Farmer Groups & Farmer Institutions.

The review is conducted in a turbulent period in Nepal, awaiting a new constitution and a national agreement on the future direction for the country and how it is to be organised. The review should look into how the programme takes into consideration the particular challenges in the process towards the New Nepal, with an expressed goal of creating an inclusive society for all Nepalese and strengthening the position of the local communities and regional bodies in relation to the capital, possibly based on a federal structure.

Also other issues of particular concern, as addressed in the 2005 MTR of IPM Phase I and the 2007 Appraisal of IPM phase II shall be assessed. This includes monitoring system/baseline data and financial reporting.

3. Scope of Work

In general the review team shall address all issues found to be pertinent to meet the stated objectives and purposes. Hereunder, but not necessarily limited to, the five topics of institutionalisation under paragraph 2, shall be reviewed, in particular in light of the ongoing political process in Nepal and the remaining conflict situation.

3.1 Efficiency

3.1.1 Verification of progress with regard to Institutionalization:

- On a general level progress compared to phase I shall be assessed. Among other issues, status of handover of responsibilities from FAO to PPD should be assessed. The assessment of progress should also take the recommendations in the 2005 review and the 2007 appraisal into account.
- What is the progress on the coordinating level? Has the programme resulted in new bylaws, or to improved implementation of existing IPM policy?
- On the Support Services Institutions level it should be assessed to what extent DDCs function as service-providers. Stakeholders' views, including the Ministry of Local Development (MLD) and the LGCDP Secretariat, should be asked for.
- How does the work on institutionalization of the programme take into consideration other ongoing reform programmes, including LGCDP?
- How does the work on institutionalization of the programme take into consideration the ongoing political processes to formulate the visions for the future Nepal? To what extent has the programme built in necessary flexibility to cater for future organisational structures of the country?
- To what extent and how has the programme in its work on institutionalization regarded possible intended and unintended, positive and negative effects on the ongoing political processes, if any? To what extent and how have such effects been mitigated?

3.1.2 Donor Coordination

- What is the value added of Norwegian project support to the Nepalese Agricultural sector through the IPM programme compared to similar donor-funded programmes?
- Does Norway have a comparative advantage in the agriculture sector that has informed the programme?
- What is the relevance of the relatively expensive training of DADOs and other governmental officials, given the frequent shift of positions in the government system?
- What is the future relevance of a separate IPM-programme compared to including IPM related activities into other programmes?
- Make a mapping/overview of other donors within the pest-management sector.
- Is there other ways of donor coordination that could be explored?
- How does Norway contribute to coordination in this sector?

- To what extent are there possibilities for cooperation/harmonisation with other donor financed programmes in the agriculture sector? Is SWAP in place for the agricultural sector?
- What are the synergies/overlaps with other programmes that also involve local support? E.g. ESAP/LGCDP.

3.1.3 Efficiency of activities carried out:

- Can progress and efficiency in the IPM programme be verified?
- To what extent does the present report format enable efficiency measurements on various levels in the goal hierarchy?
- An assessment of whether the programme is efficiently managed, should be made
- Efficiency should, if possible, be assessed for cost per Farmer Field Schools and per trained farmer and IPM facilitator, cost per trained DADO, cost per trained cost per trained JT/JTA. The cost should be compared to corresponding programmes/projects inside and outside of Nepal
- To what extent have possible effects of the ongoing political processes on the efficiency of the programme been assessed?

3.1.4 Compliance with agreements/reviews

- To what extent have the agreement partners (the Nepalese Government and the Norwegian Embassy) complied with obligations as stated in the Agreement?
- To what extent have the implementing partners MoAC-PPD and FAO complied with their contractual obligations in the contract between the two parties
- To what extent do the recommendations in the 2005 Mid-Term Review of IPM phase I, the appraisal of the IPM phase II and the Inception Report inform the contents and reporting of the present programme?

3.2 Effectiveness

- Assess the Field Farmer Training concept compared to the approaches in other donor programmes in the agriculture sector.
- It should be assessed to what extent the programme contributes to mainstreaming IPM policy, or whether the programme rather is treated as a separate project. GoN spending on IPM related activities in addition to the Norwegian grant funding shall be identified and assessed.
- To what extent do the inputs for the five areas of institutionalisation seem adequate?

3.2.1 Achievement of objectives:

- To what extent will the immediate objectives be reached by the end of the programme?
- To what extent have inputs, outputs and activities contributed to the overall objectives of the programme?
- Are the project's immediate objectives in compliance with Nepal's agricultural sector policy? Attention should be paid to the National Planning Commission's three year's approach paper.
- To what extent may the ongoing political process of change in Nepal impact on the agricultural sector and sector policies? To what extent and how do the programme incorporate such changes? Does the programme indicate any concern of changes in immediate objectives due to these issues? How does the programme in its implementation encompass such possible changes?

- Stakeholder view of the Programme performance with regard to quality of training, institutional sustainability and possible impact from the ongoing political process in Nepal should be examined

3.2.2 Deviations:

- What deviations of plans have occurred and what are the causing factors?
- Are deviations explained satisfactorily?
- The roles and responsibilities among and between MoAC-PPD and FAO.

3.2.3 Sustainability

- Sustainability should be assessed on each aspect of institutionalisation.
- What are necessary conditions, if any, to make the programme achievements sustainable?
- Social-cultural/gender sustainability? The involvement of women in planning and decision-making should be assessed for all identified areas of institutionalisation. To what extent and how does the programme work in way supportive in enhancing gender equality and social inclusion?
- Vulnerability to the loss of key staff should be assessed, especially among DADO and JT/JTAs.
- An assessment of whether the Government of Nepal is providing sufficient resources to make the intended programme goal and development objectives sustainable, should be made
- To what extent does the programme empower rural farmers from different segments of the local societies, including indigenous people where relevant, and in particular women? To what extent does the programme reflect on how different approaches could either strengthen og weaken disparities and exclusion?

3.2.4 Financial Management and Risk Assessments

- To what extent do MoAC and FAO procedures for cost control, monitoring and disbursements seem to be adequate? Make an assessment of the transparency of the financial management systems.
- To what extent is the financial reporting detailed enough to make it possible to see how much of the funds are used on the five identified areas of institutionalization?
- To what extent and how are local beneficiaries included in assessing the financial management?
- Are audits performed by a viable source? To what extent are MoAC's and FAO's internal project audit procedures adequate? Assess the needs of audit-reviews (compliance and performance audits, including verification of assets).
- Have satisfactory measures, possibly ex ante, been implemented to avoid and detect possible corruption attempts in the programme?
- To what extent has the programme been designed adequately to fight corrupt practices?
- Assess the major risks experienced during IPM II.
- Assess to what extent the programme has addressed and mitigated these risks.
- How appropriate is the project's risk management process?

3.3 Impact

- In which areas can a programme impact be verified (or is likely to be identified in some years' time)? Special attention should be paid to the various levels of institutionalization?
- Based on the progress report it looks like that training of farmers have a gender equality and social inclusion (GESI). To what extent do the various levels of institutionalisation address GESI? Is this reflected in work plans and monitoring system? How do these plans reflect the actual gender and social disparity at the local level?
- Field Farmers Schools under the IPM programme has produced promising results with regard to increasing yields and reducing use of pesticides. Does the FFS concept have a potential for expansion and impact on a national level?

3.4 Particular concerns to be investigated

- To what extent does the programme design comply with Norwegian requirements/expectations to results management? Are the various levels of institutionalisation reflected in the programme design?
- To what extent does the programme design comply with a conflict sensitive approach aiming at minimizing identified negative effects and maximise possible positive effects on the transformation process ongoing in the country?

4. Implementation of the review

4.1 Sources of information and methodology to be employed

The members of the review team shall make themselves familiar with all relevant and available background information, such as project documents, appraisals, the agreements, addendums, the decision documents, work plans, progress reports, minutes from the Steering Committee meetings etc. The team will undertake field visits and interview key stakeholders, like the Norwegian Embassy, MOAC, FAO, SDC (Swiss Development Cooperation), Helvetas, DFID, USAID, Caritas, UMB and others.

4.2 Timetable for the preparation, field work and finalization of report

The team will consist of no more than four consultants, one or two international and at least one national consultant. One of the external international consultants will act as the team leader. The team leader should have extensive and relevant development experience and experience with Regional research institutions. The team should have expertise concerning community based capacity building, experience from Nepal's agriculture sector (policy, institutional, technical, subsidy policy), At least one of the team members must command Nepali fluently in reading, writing and speaking.

The national consultants should have experience with resource management, agricultural economics, preferably with financial and audit issues, agriculture policy and gender issues.
Norad will possibly participate with an observer to the team.
Presentation of key findings and recommendations to the embassy in Kathmandu before the departure of the team;

Draft report within two weeks after completion of 2-3 week field work;
The Implementing partners of the project, the Embassy and Norad shall provide comments to the draft report within 10 days after it has been received;
The final report shall be submitted within one week after receiving the comments.