

Review
of
Diploma Course
and
M.Sc. Programme

Management of Natural Resources
and
Sustainable Agriculture

NORAGRIC
Agricultural University of Norway

Final Draft Report from the Review Team
to NORAD's Education Division
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This report has been prepared by the three consultants named below. We share the responsibility for it and its shortcomings. Its merits have to be shared first and foremost with the local consultants in the three countries we visited: *Prof. dr. Adelaida K. Semesi*, Department of Botany, University of Dar es Salaam, Tanzania, *Mr. Dub Gelma*, Programme Consultant, Save the Children - Ethiopia, Addis Ababa, Ethiopia and *Dr. Wijaya Jayatilaka*, Department of Agricultural Economics and Extension, University of Peradeniya, Peradeniya, Sri Lanka. They formed part of our team and were our main discussion partners during our stay in their respective countries. They provided invaluable assistance for the preparation of our meetings and interviews, and have contributed to the country reports.

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Summary and main Recommendations.

The main part of the review of the M.Sc. programme "Management of Natural Resources and Sustainable Agriculture" took place in September 1994. Three Norwegian consultants and three local consultants participated, and visits were paid to the Agricultural University of Norway (AUN), and three developing countries; Tanzania, Ethiopia and Sri Lanka.

The MNRSA programme was started in 1986 and consists of a postgraduate diploma course and a M.Sc.-thesis work, each of 10 months duration. It is an inter-disciplinary programme, and is executed by the Norwegian Centre for International Agricultural Development (NORAGRIC) at the Agricultural University of Norway. The course work and the writing up of the theses take place in Norway, while the thesis field work takes place in a developing country.

The programme deals with issues which are of major importance for the future development of the countries in the South, such as the promotion of integrated systems for the sustainable use of renewable natural resources, and the introduction of improved agricultural production systems. The programme aims at contributing towards better understanding of local social and economic structures; gender issues; land tenure issues and ecology, which are important elements for better planning and implementation of rural development projects or policies. The target groups for the programme are planners, managers and teachers dealing with integrated resource management. The students have quite varied educational and job backgrounds, and they come from widely different cultures; - which is both an asset and a challenge for the teaching.

A total of 164 NORAD fellows from 17 developing countries have attended or are attending the MNRSA programme, plus 27 students from Norway and 5 from other industrialized countries. A large majority of the students are well qualified B.Sc. holders, and many of the foreign students have long working experience. A majority of the students are between 25 and 35 years old, and the intake of female students has been 31 per cent of the total intake 1986-94. A large part of the students have come from Tanzania (48) and Ethiopia (31), followed by Zambia (19) and Nepal (16).

The course was offered globally during the first intake of students in 1986, but the need for some geographical concentration was soon realized. Now the courses are offered to students from Bangladesh, Botswana, Eritrea, Ethiopia, India, Mali, Mozambique, Namibia, Nepal, Nicaragua, Pakistan, Sri Lanka, Sudan, Tanzania, Zambia and Zimbabwe. All applicants must be nominated by their Government and the applications must be recommended by the employer. The procedures for selection and screening of candidates seem to vary much from country to country.

An overwhelming majority of the MNRSA students have, after graduation, returned to the institutions they were recruited from, and 111 out of 115 graduates from developing countries have returned to their home country after finishing their studies. The 'brain drain' has, thus, been quite modest.

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The programme's linkages to NORAD general development policy and education policy are discussed in page 9-16. It is concluded that some linkages to NORAD policies are strong, while others are rather weak, especially with respect to institutional linkages and institution building in developing countries.

The quality and relevance of the training are discussed in Chapter 2 and Chapter 3. The programme seems to have been relevant for a majority of the graduates, especially for those who work in management positions or within training/research. However, a number of graduates felt that, in their present work, they are not given tasks where their training is relevant, possibly because they are working under people who are discipline oriented and have little understanding of an inter-disciplinary approach.

An overview of the first year courses is given on page 18. The students were generally satisfied with most of the courses, but felt that some of them are too elementary. They also suggested that the teaching should be more differentiated, since some students may need some elementary and basic teaching while other students need more advanced tasks to work on. Some students also held that the programme was more *multi*-disciplinary than *inter*-disciplinary.

An anonymous evaluation of each course takes place at the end of each semester. The evaluations are elaborate and in many ways impressive, but do not seem to have led to the continuous curriculum revision one could have expected, and it is first after the study year 1993/94 that a major curriculum revision seems to have taken place.

The students were generally satisfied with their teaching, but many of them stated that they would have preferred more of the courses taught by teachers from developing countries. A number of them mentioned the need for a course leader with wide experience of living and working in developing countries. A number of Asian students felt that too many of the examples given by the teachers in their case studies and teaching were taken from Africa. Many mentioned that the most pronounced weakness of the first year course was its lack of gender perspective, which they regarded as a very important issue.

Most of the exams seem to be fact oriented; asking just for recall of facts and definitions, and inter-disciplinary knowledge is seldom asked for. The way exam questions are set determines the curriculum more than proclaimed aims and objectives of the study programme. The setting of exams has, therefore, a negative impact on the programme's main objective of inter-disciplinarity.

The various first year courses are commented on page 21-27. Our comments are based on students' evaluations, interviews and questionnaires, as well as the study of some text-books, exam papers and course outlines.

The permanent teaching staff seems to have a wide and varied professional background, and many have experience from tropical countries, especially from Africa. However, some of the teachers have only limited experience of the South, and some lack pedagogical training. Female lecturers are under-represented, and rather few lecturers have been recruited from the developing countries.

Many of the lectures seem to be rather theoretical, and there is not enough use of concrete and illustrative examples and case studies. There is also a need to prepare more relevant course material and, in some cases, to find text-books built on the experiences from the South, preferably written by researchers from developing countries. Many students would, also, appreciate more field trip participation, as they learnt more from field excursions than by listening to lectures in the classroom. Group work takes place but the students have frequently not been exposed to this teaching method before and lack training in how to work effectively in groups.

The second year of the Master degree programme is entirely devoted to field work and writing up of

a Master thesis. The students are asked to prepare preliminary research proposals before mid-January of their first year of study, and a Norwegian supervisor is assigned to each student. There is also a local supervisor for the field work, who is often suggested by the student. A list of recommended research topics is worked out by the NORAGRIC teaching staff.

There is a need for institutionalization of the local supervision and to bring it into problem-oriented and inter-disciplinary research planned by the country itself. The communication between the supervisor from Norway and the local supervisor should be improved, and there is a need to involve the local supervisor in the grading of the thesis. There is, also, a need for better institutional cooperation and smoother routines for the economic compensation to both the institutions and individuals taking part in the field work supervision.

Nearly all the students have appreciated their stay in Norway, and they are satisfied with the social arrangements offered by NORAD/NORAGRIC. They have contrasting experience of social life in Norway. Mixed accommodation seems to be an important element for enhancing cross-cultural contacts. Without exception, all graduates who had shared accommodation with Norwegians expressed that they had made good friends, whereas many of those who had not shared flats with Norwegians stated that people from the North were cold and difficult to make contact with. The recent decision to change the policy of mixed accommodation was, therefore, much criticised.

The 'Friday seminars' were valuable for social interaction as well as for discussions. Some individual teachers seem to devote much of their free time to the students, but a number of students stated that the lack of social relations between students and staff caused concern. On the other hand some NORAGRIC staff members felt that the students were often socially isolated and were sitting in their own rooms most of their free time. It should here be noted that the majority of the participants at the MNRSA course are much older than most of the Norwegian students at AUN, and may have different social habits. A number of them are religious; they are used to a 'mature' family life, and will not drink or dance even in their home countries, or they find it rather meaningless to spend much money going to restaurants or participate in the young students' social events.

Many female students with young children had experienced problems before and during their decision to study in Norway. Homesickness and worry about the children, left in their home countries, is a common problem for them.

The programme administration seemed to emphasize the academic development of the MNRSA programme during its innovative and experimental first years of existence. Less weight was given to the establishment of appropriate routines for the daily management of the programme, to economic monitoring and control and to the establishment of formal arrangements with the different partners involved in the course.

The establishment of more systematic and formal management procedures has been a main task of the present course administration, which has created a heavy work load. The daily management issues are also quite complex for a programme which deals with candidates of very many nationalities, educational backgrounds and cultures, and one encounters a number of logistical and bureaucratic problems during student intake and follow-up of the field work.

It seems as if the academic part of the programme, the promotion of a true inter-disciplinary spirit

and the long-term planning has been given a lower priority during the last years, due to the many other tasks of daily administration. A reorganization, dividing the responsibilities, would therefore be appropriate. There are good reasons for more active involvement of both teaching staff and students in the academic development of the programme. A number of the persons interviewed suggested that a teaching staff member should be given responsibility for this, supported by a working committee with representatives from students, teaching staff and administration.

The programme deals mainly with training of personnel working in Government organizations and training/research institutions. The programme's impacts are difficult to measure, as the trainees come from very many different countries and organizations, and as one cannot expect a training programme to create radical changes within a short time. Many of the Government organizations are, furthermore, rather rigid and bureaucratic. They have a weak tradition for inter-disciplinary approaches and for delegation of responsibility to field or middle management levels.

The fact that a large majority of the trainees have returned to the institutions from where they were recruited along with their fairly high work motivation is, perhaps, the best measure of the programme's positive impact. A majority of the MNRSA graduates we interviewed had positive work experiences, and many stated that they had changed their attitudes and had become more confident during their stay in Norway. This was confirmed by interviews with a number of their employers and supervisors, who stated that most graduates performed well in their present work.

However, about 25% of the graduates interviewed were rather frustrated, as they were not able to apply their knowledge properly, due to lack of resources or because they worked in an environment that did not utilize their knowledge. In such a situation they will not be able to contribute much to competence development in their organizations in the short perspective. If the graduates are promoted to more influential positions, this may change in the long term.

It seems as if those working in NGOs or with training or research in academic institutions were more efficiently utilized than their colleagues working in ministries or parastatal organizations. Four figures on pages 44-46 illustrate the graduates' own perception of their work motivation and their use of the knowledge they gained through their MNRSA studies. On pages 46-47 there is a discussion of the impact on a few institutions in Tanzania, Ethiopia and Sri Lanka.

The review team had no time for a systematic assessment of the programme's contribution to competence development in Norway. It was observed, however, that the professional milieu attached to the MNRSA course has contributed much to raise NORAGRIC's and Norway's level of competence and understanding of rural development issues in the South. A number of staff members have been used for international consultancies, or as resource persons at conferences.

Of the 26 'Norwegians' who have graduated, six are now working in developing countries and three in international organizations. Ten of the graduates are working at universities, many of them dealing with research related to developing countries or international training. Some of the graduates are now in senior positions, allowing them to have some influence on the organizations in which they work. The impact on NORAD and the Norwegian Ministry of Foreign Affairs seems to be limited, as there is, unfortunately, no systematic recruitment of personnel from these organizations.

NORAD's role for the future of the MNRSA programme is discussed in Chapter 6. The review team thinks that the programme should have an important future role, as there is a substantial need for inter-disciplinary training for the management of natural resources.

There is considerable scope for improving the programme in the coming years, through:

- A revision of the curriculum;
- some organizational changes in order to give higher priority to the academic development of the course;
- improved supervision of the M.Sc. Thesis field work;
- introduction of more networking activities to maintain the contact with MNRSA graduates after they finish their studies in Norway; and
- the establishment of stronger institutional cooperation with universities and other relevant organizations in developing countries.

The long-term goal for the programme should be to transfer more responsibility for the training to one or more institutions in the South, preferably one in Asia and one or two in Africa. This transfer should be gradual, as it is anticipated that to successfully transfer an inter-disciplinary training programme will be a more complicated task than to transfer a specialized course. A possible full transfer may take a number of years, as there is a need to build up the necessary competence in widely differing professional fields. A continued support to MNRSA training in Norway may be well justified even after such a transfer has taken place.

The first phase of a programme for the transfer of responsibilities to institutions in the South may include the following:

- Transfer of responsibility for the supervision of the M.Sc. thesis field work;
- introduction of staff exchange programmes and a Ph.D. programme for key personnel working in cooperating institutions;
- support to networking activities; and
- support for conducting short MNRSA courses for field personnel at the cooperating institutions.

Decisions on further transfer of responsibilities may be taken after a couple of years, when the performance of the different institutions during phase one is clearly seen. In a possible second phase it would be natural to transfer the full responsibility for the second year of the MNRSA programme to institutions in the South, while the possible transfer of the responsibility of the full programme may take place in a third, or final, phase.

There are, as indicated above, a number of alternatives for continued NORAD support to the programme, and decisions on a possible transfer of the NORAD support to institutions in the South are partly of a political nature. These issues are not dealt with in depth in this report, and should, therefore, be further discussed and analyzed.

Recommendations.

The main recommendations of the review team are as follows:

The continuation of NORAD support to MNRSA training is recommended.

It is recommended that the NORAD support to the MNRSA programme should continue in its present form for a transition period only, and that it should be replaced by a support which is more actively aimed at a gradual transfer of responsibilities and tasks to cooperating institutions in the South. Three institutions may be selected for the first phase(s) of this cooperation, one in an Asian country and two in African countries. In order to finance the increased institutional cooperation, a budget increase is recommended for the duration of the transfer period.

The alternatives for future NORAD support to the programme and the envisaged partial or full transfer of the support to one or more institutions in the South should be further discussed and analyzed, as the review team has not been able to cover these issues in depth.

A reorganization of the course administration is recommended. One person should have responsibility for the general administration. Another person, preferably from the teaching staff, should have responsibility for the professional development of the programme. He/she should be supported by an advisory working committee dealing with the academic development of the programme, with one representative from the students, two from the teaching/administrative staff and one from one of the cooperating departments at the AUN.

It is strongly recommended to employ more female staff and staff/guest lecturers from developing countries.

Co-teaching and co-planning of teaching and exams should be encouraged in order to ensure more inter-disciplinarity in the courses. Exams should cut across several courses and be made truly inter-disciplinary.

Mechanisms should be created whereby the valuable evaluations of the course made by the students after each semester are taken account of and lead to a continuous curriculum revision process.

For courses lacking textbooks of an inter-disciplinary nature and examples from the South, teachers should be encouraged to edit course readings, preferably in cooperation with a researcher from the South.

It is recommended that more curricular options be created to cater for the varying background and interests of the students, and that more use is made of excursions and field trips.

The supervision of the M.Sc. field work should be strengthened. Institutes in developing countries that employ MNRSA graduates or others with similar training should be identified and be used for local supervision and for the preparation of lists of recommended research topics, mainly through the involvement of MNRSA graduates and other personnel who deal with inter-disciplinary research. These persons should also be actively involved in the grading of the M.Sc. theses and be utilized as guest lecturers at AUN from time to time.

The social arrangements for the students should be looked at, and it is recommended that the present

accommodation practices for NORAD fellows at AUN are rearranged, so that Norwegians and fellowship holders again share flats as far as possible. NORAGRIC should take an initiative to discuss this with the relevant organizations dealing with student accommodation. The locations of the flats should also be considered. Since the MNRSA students are mature and have a heavy work load, quietness and possibilities for studying in their rooms should be a necessary consideration.

It is recommended that the mechanisms for intake of students and information about the MNRSA programme are looked into, as the practices seem to vary immensely from country to country. With the aim of harmonizing this, it is recommended that NORAGRIC in cooperation with selected NORAD offices should discuss the selection of candidates and the distribution of course information with the relevant indigenous organizations. A geographical concentration of the programme should be considered, restricting the student intake to fewer countries, for example, 4-6 countries in Africa and 3-4 countries in Asia.

It is recommended that there should be a systematic intake of qualified and interested candidates from NORAD and the Norwegian Ministry of Foreign Affairs, and that the selected persons should be given leave of absence.

It is recommended that a special study should survey existing courses in the field of integrated management of natural resources and sustainable agriculture, as well as existing international or regional networking activities in this field. It is recommended that the programme should give more emphasis to networking activities and contacts with MNRSA graduates following their completion of studies in Norway.

1. Background.

1.1. Introduction.

The decision to review the M.Sc. programme "Management of Natural Resources and Sustainable Agriculture" (MNRSA) was taken by NORAD's Education Division in the autumn of 1993. The Terms of Reference for the review are given in Annex 1.

The review mission was requested to interview MNRSA students and staff and NORAD personnel in Norway, to prepare and present questionnaires, and to review relevant documents. The field work was to take place in Tanzania, Ethiopia and Sri Lanka, where meetings were to be held with MNRSA graduates, employers, NORAD staff, Government officials and personnel responsible for manpower development and education in the fields of agricultural extension and natural resources management.

Three consultants were selected for the task: *Prof. dr. Birgit Brock-Utne*, Institute for Educational Research, University of Oslo (education expert), *Janne Lexow*, Nordic Consulting Group, Oslo (social anthropologist) and *Trygve Refsdal*, ORGUT A/S, Oslo (natural resource management expert and team leader). Three local consultants were recruited for the field work in the three countries we visited (see acknowledgements).

The review was prepared already in May, 1994, when visits were paid to the Agricultural University of Norway (AUN) for meetings and interviews with MNRSA students and NORAGRIC staff members, as well as with other AUN staff. The team met on 5. September for team discussions and meetings with NORAD personnel in Oslo.

The field work lasted from 12. September until 2. October. It consisted of a three days visit to the Agricultural University of Norway, and visits of nearly six days in Tanzania, nearly five days in Ethiopia and nearly five days in Sri Lanka, plus three travel days.

We met a total of 115 persons, 40 in Norway, 28 in Tanzania, 25 in Ethiopia and 22 in Sri Lanka.

We interviewed 14 MNRSA students and 24 MNRSA graduates/diploma holders at the Agricultural University of Norway and in the three countries we visited. We could not meet as many students as anticipated at AUN, as there were no classes at the end of the academic year. We were, furthermore, not able to meet those MNRSA graduates who work in the more remote districts in the countries we visited, since, due to time constraints, we had to concentrate our work to the capitals. Our selection of persons for interviews may therefore be somewhat biased. We made, however, field visits to the universities of Sokoine in Tanzania and Peradeniya in Sri Lanka. Time did not allow for any field visits in Ethiopia.

It is impossible to measure objectively the impact of the programme on the large number of organizations and institutions we have been visiting during a short time. Our comments and conclusions regarding impact of the programme are therefore mainly based on views and

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statements given by NORAD personnel, the MNRSA graduates and their employers, and on our own observations.

1.2. The MNRSA Programme.

The programme "*Management of Natural Resources and Sustainable Agriculture*" (MNRSA) consists of a postgraduate diploma course and a M.Sc.-thesis work, each of 10 months duration. The students are awarded a Postgraduate Diploma after the first year of study, or a Master of Science Degree after the second year.

The first year of study deals with course work, and 11 obligatory courses are taught. The field work for their M.Sc. thesis is carried out at the start of the second year, and is normally done in the students' home countries. It lasts for five months and is supervised by two supervisors, one local supervisor and one stationed in Norway. The analysis of the material collected during field work and the write up of the thesis are normally done after the students return to Norway.

The programme is expected to provide inter-disciplinary and problem-oriented training. Its main objective is to give basic training in integrated approaches to the management of natural resources and sustainable agricultural production systems in developing countries. The aim is to train personnel who can manage natural resources sustainably, both socially and ecologically. They should be able to deal with and understand the problems farmers and other rural people meet in their struggle for a better living, and have a broad orientation for the planning and implementation tasks in integrated development projects. For this they need both technical knowledge on production systems and a general understanding of ecological principles, as well as information on socio-economic conditions, gender issues and resource use conflicts.

The target groups are planners and managers, and teachers concerned with integrated resource management.

1.3. Justification of the Programme.

The programme deals with issues which are of major importance for the future development of the countries in the South, such as the promotion of integrated management systems for the management of renewable natural resources, and the introduction of improved agricultural production systems.

A major environmental problem in these countries is unsustainable exploitation of the natural resources, which often endangers fragile tropical ecosystems, and leads to land degradation. The long-term effects of this are loss of soil fertility, more irregular water flow, scarcity of

woodfuels and a harsher micro-climate. This has a negative effect on the food security situation, and can increase work loads dramatically, in particular for the women and the poor.

The programme also contributes to an increased understanding of local social and economic structures, local production systems, gender issues and land tenure issues, which are important elements of the basic knowledge needed for sound planning and implementation of rural development projects or policies. It is difficult to promote a balanced and broad development process in rural areas without an in-depth understanding of such issues.

There is also a need for changes in attitudes and priorities in many Government organizations dealing with land use and the management of reserved land. Their strong traditions, which often originate in Colonial rule, are sometimes aimed solely at the conservation or preservation of natural resources, mainly on gazetted land, under Government control. The forest guards and park guards are the policemen for this task.

Such systems were possible to maintain efficiently when the pressures on reserved land were moderate and Government was strong. Today's situation is much different from this, and calls for new and participatory approaches to natural resource management. The people who live near to and depend on a reserved area should be actively involved in its management, whereby their needs and the value of natural resources products for local use can be recognized and incorporated into possible management systems. Through this they will have a vested interest in the protection and sustainable use of such areas.

Competence building in this field is much needed, to promote extension skills and to develop and practice more people-oriented management systems, based upon a broad and interdisciplinary approach. The strategies and objectives of the MNRSA programme are well justified also in this context.

1.4. Organizational Structures and Linkages.

1.4.1. General.

The MNRSA programme was started in 1986. The programme is executed by the Norwegian Centre for International Agricultural Development (NORAGRIC), an institution which deals with international development cooperation at the Agricultural University of Norway. It is financially supported by NORAD, at present regulated in contracts dated 29. May 1991 and 1. February 1994 between NORAD and NORAGRIC.

1.4.2. NORAGRIC.

The training programme is one of many activities at NORAGRIC, which coordinates most of AUN's activities related to developing countries. The Centre also deals with international training and research, provides backstopping services to AUN departments ('institutes') involved in international programmes, administers NORAD projects and has carried out a

large number of consultancies for NORAD, SIDA, DANIDA, Norwegian Ministry of Foreign Affairs, and many multi-lateral international organisations such as the World Bank, FAO and ILO, plus a number of NGOs.

NORAGRIC is organized as a "centre" and cooperates with other AUN centres and a number of AUN's institutes. There are now plans to amalgamate NORAGRIC, Centre for Sustainable Development and AUN's Office for Eastern Europe, into a *Centre for International Environment and Development Studies*, from 1. January 1995. The short name version of the new centre will continue to be NORAGRIC.

The Centre employed 26 persons as per 1. June 1994, two out of whom were on leave. It is managed by a Director, supported by an advisory working committee with 7 members. Two of the members are elected by the staff. Permanent members are NORAGRIC's Director, the Head of Administration - who is also the committee's secretary, plus three representatives from the research, training and project sections of the Centre.

A major part of NORAGRIC's revenues (1994 budget of NOK 21 million) comes from their own income generating activities, such as consultancies and backstopping services; as well as from project management fees and training fees, of which the MNRSA programme plays an important part. Only a minor part of its budget is basic support ("*grunnstøtte*") from NORAD, now NOK 0.15 million per year, or less than one per cent of total revenues. Six and a half staff positions of the total 26 are financed over the Norwegian Government Budget, and basic budgetary support from the AUN is close to NOK 1,9 million.

1.4.3. The MNRSA Programme.

The Director of Studies is responsible for the administration and the professional development of the MNRSA programme. Issues related to the administration of the MNRSA programme are also discussed in teaching staff meetings, which are normally held quarterly. The students are not represented in the teaching staff meetings, and have no representation in NORAGRIC's working committee.

Most of the teaching and field work supervision of the MNRSA programme is done by the permanent NORAGRIC staff. There are also some close links with some of AUN's departments (or "institutes"), such as:

- The *Department of Biology and Nature Conservation*, which offers a M.Sc. programme for Norwegian students, closely related to the MNRSA programme¹. There is an exchange of lecturers between the two institutions, the department's M.Sc. students attend the Friday seminars at NORAGRIC, and the department provide supervision of M.Sc.-thesis work.

¹ The programme is called "*Tropisk Økologi og Naturforvaltning i U-land*", which may be translated into "Tropical Ecology and Natural Resources Management in Developing Countries". The majority of the lectures are held in Norwegian, but the main textbooks are in English.

- The *Department of Economics and Social Sciences*, which provides six man-months of teaching and supervision of M.Sc.-thesis work;
- the *Department of Mathematical Sciences*, which is responsible for the three credits' course "Statistics and Data Processing";
- the *Department of Land Use and Landscape Planning*, which is responsible for an excursion and for some lectures in resource planning and law; and
- the *Department of Forest Sciences*, which has been responsible for the supervision of a few students doing their M.Sc.-thesis work.

1.5. Characteristics of the Student Population.

A total of 164 NORAD fellows from developing countries have attended or are attending the MNRSA programme. The corresponding number of students from Norway and other industrialized countries is 32. The students have had quite varied educational and employment backgrounds, and they have come from widely different cultures; - which is both an asset and a challenge for the teaching.

A large majority of the students are well qualified B.Sc. holders, and many of the foreign students have a long working experience. The applicants must be nominated by their Governments and by recommended by their employer. Nearly all foreign students have come from Government organizations, and training or research institutions.

However, during the last intake (autumn 1994) five students from different NGOs were admitted to the MNRSA courses².

The programme was offered globally during the first intake of students (1986/88). The need for some geographical concentration was soon realized, and in 1987 a decision was taken to restrict the student intake to Norway's main partner countries, plus Nepal and the countries in the

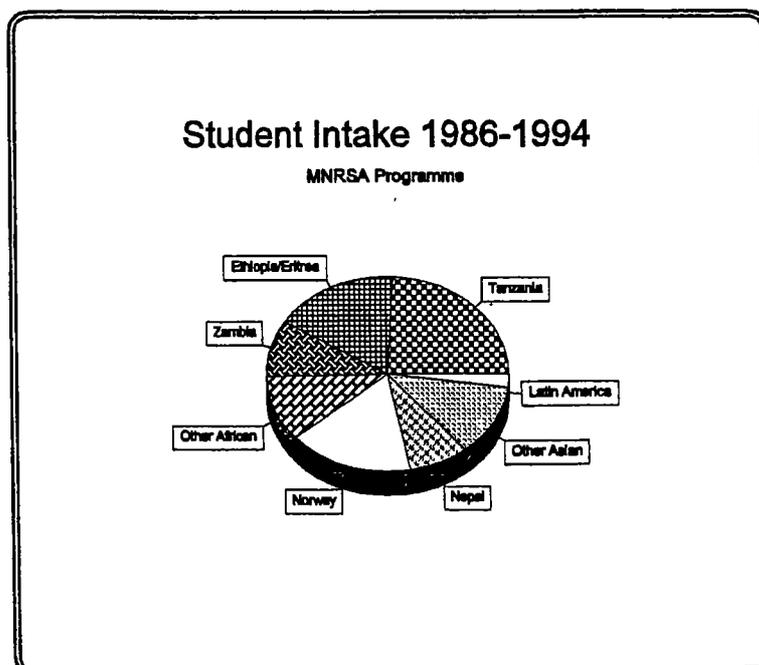


Figure 1: Student Intake, MNRSA Programme

² They do not receive NORAD fellowships, but finance their studies through a special arrangement with "Statens Lånkasse", a Norwegian Government loan institution providing loans to students.

NB Return home for the level

Sahel Zone. In 1993 the courses were offered to students from Bangladesh, Botswana, Ethiopia, India, Mali, Mozambique, Namibia, Nepal, Nicaragua, Pakistan, Sri Lanka, Sudan, Tanzania, Zambia and Zimbabwe. Eritrea was added to the country list in 1994 and Uganda from 1995. There has been no intake of Sudanese students in the two last years.

Students from a total of 17 foreign countries have been admitted to the programme since its start. There have been only four or fewer participants through the years from 10 of those countries. A large part of the foreign students have come from Tanzania (48) and Ethiopia (31), followed by Zambia (19) and Nepal (16). The distribution of student intake on countries/regions is illustrated in the figure on page 5.

A majority of the students are between 27 and 35 years old. For the NORAD fellows 1992-93 the average age was 31 years at intake, ranging from 24 years to 36 years. The intake of female students has been 31 per cent³, measured as an average from 1986 to 1994. The 1994 intake of female students was as high as 41 per cent.

1.6. Selection of Candidates and return to the Institutions from where they were recruited.

There is a very high number of applicants for the MNRSA courses, and the selection criteria for admission are therefore strict. There seems to be much variation from country to country as regards course information and NORAD's role in the recruitment process.

The MNRSA programme has a higher application/-intake ratio than all the other seven NORAD supported Diploma/-Masters courses, as seen in the figure to the right.

The number of applications reaching NORAGRIC is now about 150 per year, and there has been an increase over the years. 20-25% of the applicants have been women during the last four years. 22 NORAD fellowships are offered each year to students from

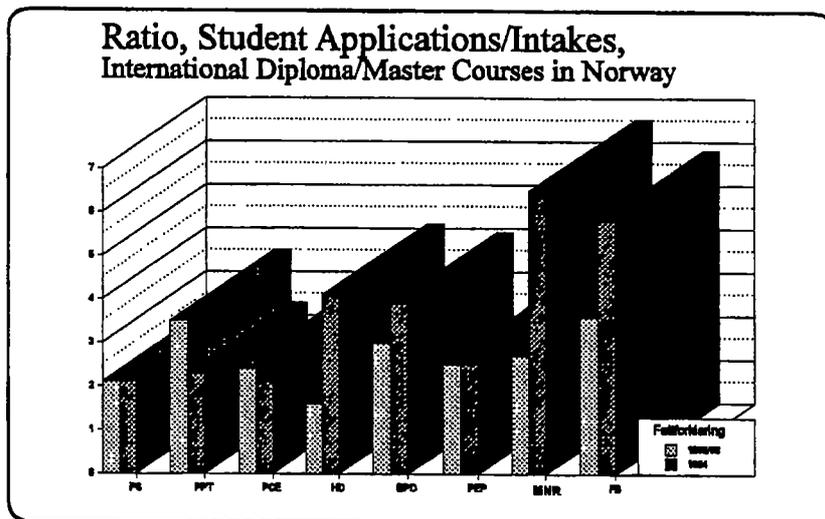


Figure 2: Ratio of Student Applications to Intakes, NORAD supported Diploma/Master Courses in Norway. After Anders Wirak/DECO, 1994. See page 12 for explanation of course abbreviations.

3

The percentage of female students from developing countries is 27, while 50% of the students from industrialized countries have been women.

? when acknowledged

7

developing countries. NORAD also provide some additional support to the MNRSA programme to promote the intake of Norwegian students; a quota of four students per year.

The procedures for selection and screening of candidates seem to vary tremendously from country to country, although they all are nominated by their Government and recommended by their employer, as mentioned above. About 50% of the applications now come from Tanzania (79 in 1993 and 71 in 1994). Application forms for NORAD fellowships are sent to a large number of Tanzanian institutions (about 250 were distributed this autumn), and the applications are forwarded by the NORAD Office in Dar es Salaam to NORAGRIC.

The criteria for selection seem, on the other hand, to be quite strict in some other countries, like Ethiopia and Sri Lanka. In Ethiopia the selection is controlled by the Commission for Higher Learning in the Ministry of Education. There have been only 4-5 applications per year from Ethiopian students during the last years, and there was a dramatic fall in number of applications from 1991 to 1992 (from about 25 per year to 4 in 1992). This was probably due to organizational problems caused by the reorganization of many Government organizations in this period. It now seems to be quite difficult to get hold of a single application form in this country. According to the official policy of the country, candidates who work at the regional levels are now given priority for scholarships. This is an incentive for decentralization and for seeking employment outside of the capital.

The criteria for selection seem to be equally strict in Sri Lanka, where the Department of External Resources in the Ministry of Finance has the control over the selection of candidates. Another and quite different example is India, where fellowship offers are advertised in some newspapers. Insufficient information about the NORAD fellowship offers and the MNRSA programme, as well as general communications problems, may be a reason for a low number of applications from other countries.

An overwhelming majority of the MNRSA students have, after graduation, returned to the institutions they were recruited from. We have not a full record of this, but our estimate is around 90%. Of the 27 MNRSA graduates/diploma holders we interviewed or who filled in questionnaires, only two had not returned to their previous work place after graduation. 7 of the 27 were now in a new job, 1-6 years after graduation. Five graduates had finished their Ph.D., or had started/were about to start on a Ph.D. study.

111 out of 115 graduates from developing countries returned to their home country after finishing their M.Sc. studies. Of the four who did not return, there was one Ethiopian student and three graduates from Sudan. The 'brain drain' has, thus, been quite modest. This low figure stands in contrast to some other training abroad, where the figures for 'brain drain' in some cases have been high.

Sudan / Ethiopia. X

1.6.1. Recommendation.

There seems to be a need for improved communication with the relevant authorities in different countries with respect to their policy and procedures for the selection of students.

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middle class - upper group but USA 1/2

The costs per student month seem to be somewhat lower for the MNRSA programme than for the other NORAD supported Diploma/-Master courses in Norway, according to a study done by DECO/Anders Wirak in 1994. This is illustrated in the figure to the right:

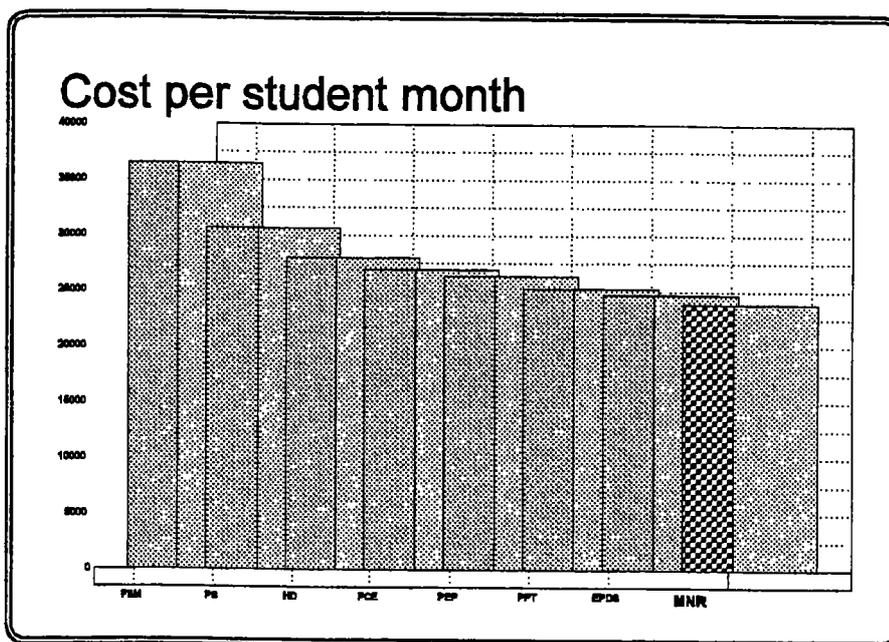


Figure 4: MNRSA Course costs compared to costs for other NORAD supported courses (Source: DECO/Anders Wirak). For explanation of course abbreviations, see page 12.

1.8. Linkages to NORAD's General Development Policy.

1.8.1. Background.

The NORAD guidelines for its development assistance are outlined in the two major policy documents "Strategies for Development Cooperation. NORAD in the Nineties" (1990) and "Strategies for bilateral development cooperation -part II Basic Principles" (1992).

The review mission's findings as regards the linkages between the MNRSA programme and NORAD's general development policy are summarized in the following chapters.

1.8.2. Findings and Observations.

1. Poverty alleviation.

It is difficult to establish a clear link between tertiary education and poverty. The course in Norway provides opportunities for only a small number of students, most of whom appears to be from upper income groups. With the high costs associated with overseas scholarships, grants of this kind may be viewed as a subsidy to an already advantaged group.

However, the knowledge, attitudes and management skills acquired during MNRSA training are later transmitted to others and may gradually contribute towards achieving a sustainable

MNRSA ... ^{less} ... _{high} ...

interaction between economic, social/political factors and the environment, which is a prerequisite for combatting poverty.

2. Recipient responsibility.

There is little evidence to suggest that:

- The MNRSA course has been established taking partner plans or strategies into account.
- The course has been included on the agendas of bilateral partner dialogues.
- The MNRSA includes manpower plans/assessments in order to strengthen competence and manpower levels in selected countries.

However, proposals to participate in MNRSA originate from or have to be approved by institutions. In principle this may reflect a training need of that institution.

3. Institutional development.

Course plans and documentation do not include the following strategies:

- How local institutional capacity and competence can be strengthened and extended.
- How cooperation between NORAGRIC and institutions in developing countries can be strengthened and extended.
- Teachers exchange or recruitment from particular institutions.
- How to optimize institutional supervision of student field work.

The potential for building local institutions is dependent on how these aspects are dealt with in planning and implementation. Norwegian development assistance emphasises aspects of direct institution building in development countries, but the linkages between the MNRSA course and Norwegian policy appear to be weak.

4. Environmental education.

NORAD has no policy or established role for environmental education. However, it is stated that all channels for bilateral assistance will be utilised to ensure that environmental factors are taken into account. The MNRSA certainly fits well within the policy requirements in this respect.

5. Gender issues.

The number of female candidates who have been admitted to the course has steadily increased, and reached 41% in the study year 1994/95. There are no special arrangements made for female students during the study, but this successful achievement is a result of the relaxation of certain admission requirements to ensure that a satisfactory number of female candidates are recruited by NORAD Educational Division. Positive discrimination methods which imply giving preference to female candidates who are otherwise qualified, has led to a continuous increase in number of female graduates from the course. Except in very few cases, the academic success of these students has not been affected. The results of the female students have been up to high standards, and failure rates have not increased. It should also be

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mentioned that most of the female students have not been subject to any positive discrimination at all, but are qualified in their own rights.

6. Geographical concentration.

The recruitment of MNRSA students has complied with the policy of concentrating development assistance. However, the majority of the students are recruited from the priority regions, (for example Nepal, and Ethiopia and Eritrea prior to establishment of bilateral agreements).

Some programme countries (main partner countries) have hardly been represented at all, e.g. Bangladesh, Mozambique, Zambia. It is uncertain why the distribution has been so uneven, or why countries such as Nepal, where there is little bilateral Norwegian development assistance, has been a major course utilizer. This situation is probably the result of personal contacts and linkages to Norwegian supported NGOs.

Recruitment of students within different countries appears fragmented and far from smooth. In some countries a rather large number of institutions are involved compared with the small number of students who are offered the opportunity of travelling to Norway.

7. Norwegian Axis.

The contribution to and updating of Norwegian knowledge and understanding has been ensured by opening up the MNRSA-course for Norwegian students already from the very first course. 32 Norwegians have participated or are participating to date - with usually four to five students on each course. The various courses in Norway combined with research in a developing country exposes Norwegian students to the real problems and needs in the developing countries. Other elements of Norwegian axis relate to utilizing Norwegian teachers and exposure to Norwegian environmental problems through excursions. In addition a competence base has been built at the AUN in the field of integrated resource management.

1.8.3. Comments.

Some linkages to Norwegian policies are strong. With respect to the explicitly stated aim of removing inequalities in access to educational opportunities the MNRSA course has been very successful. But other important policy issues such as institution building and strengthening capacities and competence in developing countries are weak. The course seems more directed towards individuals than institutions in developing countries. There is lack of assessment of manpower needs in the partner countries, and with the exception of one lecturer's initiative to follow up the students in Ethiopia, there seems to be little feedback to the course administration of the relevance of the education provided to manpower needs in partner countries. There is no vision about NORAGRIC's role as an intermediary for improving and reinforcing the general functioning of the educational and government structures in developing countries. Neither is there a plan for how the teaching and professional knowledge and skills of teachers and administrative personnel at NORAGRIC should be kept up to date and at pace with the needs of the developing countries. Furthermore in view of NORAD's aim of

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concentrating inputs in order to maximise results one might have expected that the MNRSA course would include measures for linking up with NORAD supported programmes and how the two could be more closely coordinated to ensure that feed back from the course is brought into the programmes and vice versa. In view of the principles of concentration it is valid to question the present practice of spreading recruitment and the activity base over many institutions. The review shows that effectiveness of the course appears to be greatest where it is followed by a group of fellows from the same working place. Thereby the potential for returning graduates would be greatest not only in applying their knowledge and skills but also to change practices within the institution. There are however, very few indications that the MNRSA course actually directs its concerns and interests towards long term effects of this nature.

Akademisk kurs AB

1.9. Linkages to NORAD's Education Policy.

"The main objective with regard to fellowships is to build up broad and lasting competence in Norway's cooperating countries" (from Fellowship Handbook)

More specifically the courses shall as far as possible be:

- reasonably development oriented and consistent with aid policy priorities
- oriented towards women
- linked to Norwegian financed projects and programmes
- aimed at institution-building
- consistent with Norway's special expertise

The last few years have brought about some important changes regarding the policy of providing grants for studying in Norway in contrast to building up courses in developing countries. NORAD's Educational Division has taken the decision to build up local institutions and competence in developing countries more directly. Several of those Diploma courses which originally were offered in Norway, have in recent years been transferred to educational institutions in developing countries. Not all courses have retained the original content and profile, but quite often core concepts and methodologies have remained, while other components have been adapted to local circumstances. The course in women's law, animal husbandry and soil science are some examples of courses which have been transferred. However, some courses are still retained in Norway. In addition to MNRSA these are courses in "*Professional Shipping*" (PS), "*Pulp and Paper Technology*" (PPT), "*Port and Coastal Engineering*" (PCE), "*Hydropower Development*" (HD), "*Electric Power Distribution Systems*" (EPDS), "*Petroleum Engineering and Petroleum Geoscience*" (PEP) and "*Fisheries Biology and Fisheries Management*" (FB). There is also a course in petroleum exploration in developing countries organised by the Oil and Petroleum Directorate.

There are many reasons why so many courses are still offered in Norway, and there are strong grounds for many of them to continue at their present institutions. Providing courses locally requires a lot of funding, availability of staff, suitable recipient institutions, local capacity etc. It should also be considered that most of the above courses, as is the case with MNRSA, are held within areas in which Norway already has considerable expertise.

modest

sustain compared to need for more practically-oriented short term training which had been identified in many institutions. The rapidly growing and changing manpower situation in the government sector was also seen as a cause for some concern. In Ethiopia, however, as in the two other countries, the major concern was how to build up environmental awareness as offered in the course at national institutions. These concerns were expressed because current environmental challenges confronting the nations were perceived to be so great that sending a few students to Norway would only be a drop in the sea.

An important condition for studying abroad is the recognition in home country of the qualifications held after graduation. The fact that the course was presented in the documents as one year and ten months had caused some concern among some potential applicants in Sri Lanka, because the requirements for a M.Sc. grade was strictly twenty-four months. These two references are minor examples of the necessity of closer dialogue with partner institutions in order to develop a course that corresponds more closely to the needs of the respective countries.

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The review team did not find any close ties between the course and other Norwegian development assistance work in the countries visited. There were no signs that cooperation with institutions linked to Norwegian supported projects/programmes have been preferred. This was also the case in Ethiopia and Sri Lanka where a major concern for Norwegian development assistance relates to environment aspects and support to planned or on-going projects which are directly linked to environmental problems. This somewhat remarkable finding may to some extent relate to government procedures in the respective countries in the recruitment of fellowship holders. The team found that this aspect had been little discussed among NORAD officials, and information about the availability of scholarships had not been adequately spread to all relevant programmes. Whereas the responsibility for disseminating information of this kind was outside the control of the local NORAD office in both Ethiopia and Sri Lanka, this appeared to be less so in the case of Tanzania.

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1.9.2. Comments.

From the point of view of NORAD's educational policy, its emphasis on the Norwegian axis and its interdisciplinary approach, there may be valid grounds for continuing to offer the MNRSA course in Norway. But unless stronger links to institutions in developing countries are established at the same time, with assurance that the benefits extend beyond the few individuals that actually participate in the course; the team cannot see that a continuation in Norway would be in accordance with important principles derived from Norwegian policies for development assistance.

It is clear that studying abroad may be of considerable value in itself and will greatly benefit those who are selected. Many students view this as an excellent opportunity to broaden their minds and perspectives. However, again it must be stressed that not only is the number of students who can benefit from a course in Norway very limited due to the costs involved, but the direct links to both institution building and transfer of knowledge to partner countries are weak.

Topic - see top side 13

2. The Quality and Relevance of the First Year of the MNRSA Programme.

The quality of the MNRSA programme will be assessed here in relation to the aims given for the course in the course outline.

According to the course information distributed by NORAD, the main objective of the programme is to give basic training in interdisciplinary approaches to planning and management of natural resources and sustainable production systems in developing countries. The programme is meant to be problem-oriented with special reference to the interacting institutional, ecological and technological factors in agricultural production and natural systems management. Applicants to the course are asked to bear in mind that the programme is designed specifically for planners and managers and for teachers concerned with integrated resource management. The relevance of the course can be judged on two different dimensions: First: How relevant is the course in relation to the needs and priorities of the country? This question is discussed in our chapter seven in relation to the needs of the three countries we have visited. Secondly: How relevant is the course for former students in relation to the type of job they are now performing? This question is discussed below.

Comments by the Review Mission:

Those of the Tanzanian MNSRA graduates we met who seemed to be most satisfied with the education they had received at AUN were those graduates who returned to a job within research or academic teaching. Of those who returned to work in Ministries the ones working in the wild life departments seemed to be the ones who felt that they could best use what they had learnt.

A couple of MNSRA graduates working in Forestry Divisions of Ministries or in the Ministry of Agriculture in Tanzania felt that they were not given tasks where their training was relevant. Since they were frequently given middle level and not top level positions they might be working under people who were discipline oriented and had little understanding of an interdisciplinary approach.

En alle norske foretog i de tre jobber

All the students we met in Ethiopia claimed that the education they had received at AUN was very relevant for the job they were now in. One of them had, however, first been placed some years in a position where her training was not that relevant.

Most of the students we met in Sri Lanka claimed that their training had been relevant in relation to the job they were now in. One student said she had little use for the training in the job she was in now but she had applied for another job within research where the training she had received in Norway would have been of better use. Another student from Sri Lanka had unfortunately not been able to complete his thesis because of political problems in the country when he was doing his field-work. Another student felt that part of the teaching, specially in economics, had been too elementary for him.

2.1. The Curriculum

According to the introduction to the Course programme 1994 - 1995 basic principles of tropical ecology and production systems and integrated approaches to resource planning and management at regional and local levels have been identified as the core of the programme.

The course work in the first year of the Master degree programme covers two semesters (autumn and spring) of approximately four months duration each. 4 + 5

Three of the courses are from the study year 1994/95 being taught only in the autumn, one course (statistics and data processing) is taught both in the autumn and spring and seven courses are taught only in the spring. Attendance at the weekly Friday Seminars which run all through the year is obligatory.

Course overview based on the 1994/95 course programme

Course	Credits	Semester	Examination
Ecology, Conservation and Management of Natural Resources in Tropical and Sub-tropical Regions	2	Autumn	Written + <i>group</i>
Social Anthropology	1	Autumn	Written
Resource Economics	3	Autumn	Written
Statistics and Data Processing	3	Autumn/Spring	Written
Friday Seminars	2	Autumn/Spring	None
Applied Course in Ecology and Management of Natural Resources	2	Spring	Group Work + Written
Research Methods and Project Planning	0 1	Spring	Research Proposal
Tropical Production and Agriculture Systems	3	Spring	Written
Applied Social Anthropology	1	Spring	Term Paper
Political Economy	2	Spring	Term Paper Exam
Resource Planning	1	Spring	Written
Resource Appraisal	2	Spring	Term Paper

Application - 2 Semesters

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Findings by the Review Mission:

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An anonymous evaluation of each course takes place at the end of each semester. A report is then prepared by the Study Coordinator summarizing the students' responses. The Review Mission was given the reports after the autumn semester 1988, the autumn semester 1991, the autumn semester 1992, the spring semester 1993, the autumn semester 1993 and the spring semester 1994. As far as we can see there has been very little change in the course outlines and in the way the courses are being taught even though some rather basic criticism has been with the course from its start. The rather elaborate and in many ways impressive evaluations made by the students at the end of each term do not seem to have led to the continuous curriculum development one could have expected. It is first after the study year 1993/94 that a major curriculum revision seems to have taken place.

We have partly based our analysis of the course programme on the half-yearly evaluations made by the students. We have also been able to study some of the textbooks being used as well as a collection of previous MNRSA exam papers.

Apart from this information we have interviewed 11 MNRSA graduates in Tanzania, 8 MNRSA graduates in Ethiopia and 7 MNRSA graduates in Sri Lanka (including two students who were currently doing their field work and would be graduating in 1995) on their views of the appropriateness and relevance of the curriculum taught.

26 graduates and 8 students have also filled in questionnaires in connection with the project review.

The table to the right gives the results

gathered through the questionnaires and shows the satisfaction of present students and graduate students with the courses being offered prior to the study year 1994/95.

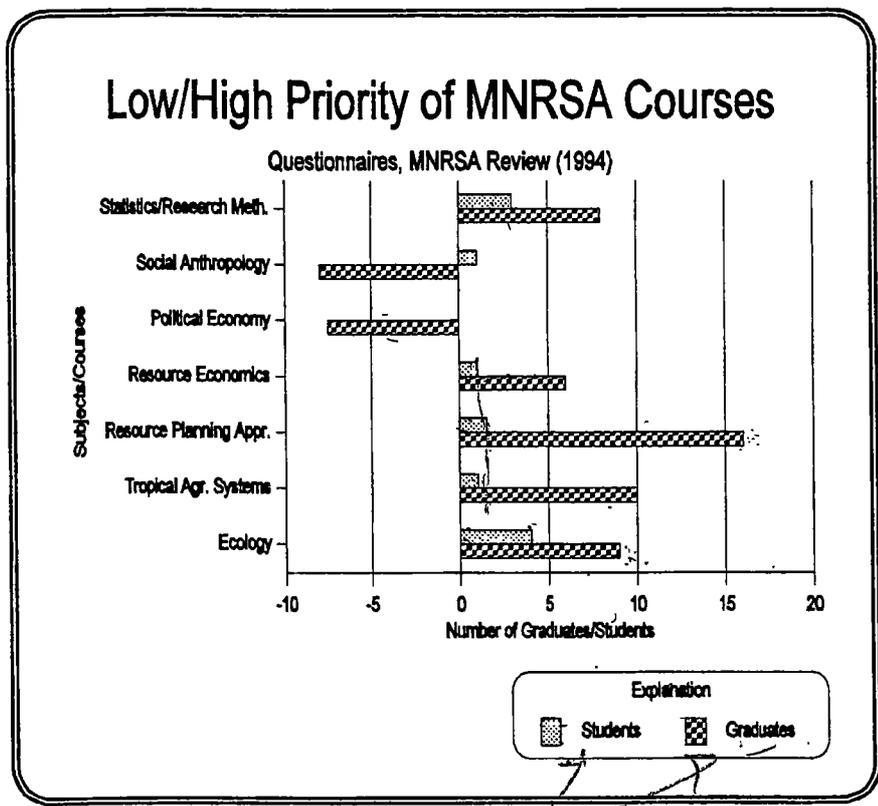


Fig. 1: The graph is based on the answers given in questionnaires to the questions: "Which subjects should be given more weight in the Diploma Course?" and "Which subjects should be given less weight in the Diploma Course?".

Se opp for det som er

2.2. General Comments.

The students are generally satisfied with most of the courses but many feel that some of them are too elementary. Many students already have a good basis in biology, economics or statistics and feel much of the first semester as a repetition. They suggest that the teaching should be more differentiated. Within the various courses, groupings based on previous knowledge should be organized. Some students may need some really elementary and basic teaching while other students need more advanced tasks to work on. Some of the students we interviewed mentioned that some of the courses ought to have been made optional and also that they should be allowed to substitute some of the courses in the programme with courses taught in English but outside of the programme; for instance substitute the economics course with a course taught in development economics as part of the programme on Nature Management in Developing Countries. For the academic year 1994/95 this wish of former students has been taken account of since students are told that in the spring semester 1995 they may opt out of courses in which they can document similar competence. However, the total number of credit points must add up to 20 (had they taken all the courses offered for the 1994/95 program they would have ended up with 22 credit points which means that they have *some* option among course even if they cannot document similar competence)

Some students held that the programme was more *multi-disciplinary* than *interdisciplinary*. It seems that the course programme was more interdisciplinary in the first years the course was taught than in the last years. In the first years most teachers would participate in the Friday seminars and contribute to making the learning going on there truly interdisciplinary. It also seems as if some of the teaching within the various courses was more problem oriented in the early days of the course. There is a need to recapture the spirit of the early days of the programme. Several students complained that many of the courses are not really taught in an inter-disciplinary and problem oriented manner. This was especially the case for students who had graduated the last couple of years.

They also mentioned the lack of a truly inter-disciplinary course leader with a wide experience from living and working in developing countries, preferably both from Africa and Asia. It was important that this course leader had a vision and a commitment to the peoples of the South and that s/he had time to listen to and discuss with students and to see to it that recommendations from students led to changes in the programme. A couple of students mentioned that they got little feed-back on their evaluations of the courses and felt that the evaluations were just a ritual. They stated that the suggestions and the problems presented by the students seemed to "go to the land of nowhere."

Students were generally satisfied with the teachers. Many of the teachers were highly praised, a couple were blamed for being too preoccupied with their own research or with consultancies to prepare their lectures thoroughly. Several students mentioned that they would have liked to have seen half of the courses taught by teachers from the South.

Many of the students we talked to mentioned as the most pronounced weakness of the first year courses their lack of a gender perspective.

Students in Sri Lanka felt that too many of the examples given by the teachers in their case-

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studies and teaching were taken from Africa. Conditions were often rather different in many Asian countries and the African experiences might not be relevant for Asian students. They felt a need for more guest lecturers from Asia and would also have liked to have had Norwegian teachers with a background from field work in Asia.

Many of the students we talked to also complained about the fact oriented exams they had been subjected to, many of a recall type. We have studied a collection of previous MNRSA exam papers and can confirm the evaluations of the students of these exams. Most of them just ask for recall of facts and definitions. The exams are also arranged according to courses taught and seldom ask for interdisciplinary knowledge. Most of the exam questions do not ask for the understanding of students of interrelationships between disciplines. Any curriculum expert knows that the ways exam questions are set will determine the curriculum more than the proclaimed aims and objectives of a study program. A study programme may, like the one we are reviewing, proclaim inter-disciplinarity as the main objective of the programme. If the exam questions do not measure this objective but rather a narrow recall of isolated facts belonging to various disciplines, this learning will be the real objective of the programme for the students.

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2.3. Comments on the various first Year Courses.

Our comments to the various courses are based on the students evaluations, interviews we have had with students as well as our study of some of the text-books, course outlines and exam papers given.

2.3.1. Ecology, Conservation and Management of Natural Resources in Tropical and Subtropical Regions.

"It dealt with real issues".

This course belongs to one of the courses receiving most positive ratings. The students experienced the course as directed towards solving problems presently occurring in the developing countries. They experienced the learning in the course as truly interdisciplinary. They found that the course was very informative and directly related to the work they are doing in their home countries. Many students complained that there were not enough hours allotted to this course.

Lecturers teaching the course have been given high ratings by the students. This is especially the case for guest lecturers. The trip to Kittilsbu occurring in the autumn of 1992 was mentioned as a very positive experience. So were the class discussions. Students from Sri Lanka complained that too many examples were taken from Africa, especially from Tanzania, more examples could have been taken from other parts of the world. A differentiated approach to teaching might be tried out here too. In this case an approach where, after some basic principles are explained, students may branch into options according to the parts of the world they come from, an Asian option and an African option for instance.



Exam papers: The exam papers for this course suffer from a preoccupation by the person who has set the question with testing too much factual knowledge. While some of the questions are good and ask for some understanding of relationships and application of knowledge other questions just ask for a recall of concise definitions. Too many questions have to be answered in too limited time. Students also complained, and we think very rightly so, that there is too little time on the exam. We would recommend considerable cuts in the number of exam questions given and a concentration on questions testing understanding and application of knowledge rather than those testing memory and recall of definitions and facts.

2.3.2. Social Anthropology

"The course is not properly defined, was never explained in the first place".

We got some ambivalent views from the students about this course. Though some found it both interesting and relevant, especially for their own personal development, others didn't see the use of it and found that it could have been made optional. There is an outspoken dissatisfaction with the textbook being used (Keesing)

Students mentioned that more case studies should be used for group work. Articles and hand-outs combining the field with the field of natural resources and sustainable agriculture should substitute the text-book. Students mentioned that the course can be considerably improved by introducing topics related to "Indigenous people and natural resource management" which would have been more relevant for students from developing countries.

Exam papers: The exam papers from this course, even more than the comments made by the students, show that the course is a course in straight social anthropology rather than an interdisciplinary course relating social anthropology to the management of natural resources and sustainable agriculture. Many of the questions are recall questions asking for definitions of social anthropological terms or for specific points mentioned by a social anthropologist. The way these exam questions is set defeats the main objectives of the course programme.

2.3.3. Resource Economics

"This course is the core of the whole program".

This course is being looked at as highly relevant and as the backbone of management and planning of resources. It has received much praise from students and was, especially in the autumn of 1992, said to be excellently taught by experts in their relevant fields and with an adequate number of case studies.

Before 1992 there were some complaints that there were too few examples from the third world given in the course. From 1992 this is no longer mentioned as a complaint and teachers seem to have succeeded finding relevant case studies from developing countries. One of the textbooks (by Cramer and Jensen) is said to give too much emphasis to the U.S.A.

Some students suggested that the course should be split into two and be taught for two semesters. Some students mentioned that there was too much reading material for the course and the time was too short.

Exam papers: The exam papers in this course are more than most other exam papers in the course programme testing understanding rather than mere recall of facts and definitions. More attention should, however, be paid to finding exam questions within resource economics more related to the management of natural resources and sustainable agriculture.

2.3.4. Statistics and Data Processing

"It enabled me to understand the basis for making various scientific judgements and inferences about any study being conducted"

? There seem to have been many improvements made in this course since its start. While the students' evaluations of the course were rather negative the first years they have been positive over the last couple of years.

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It has, however, been mentioned several times over the last years that the course ought to be given both in the autumn and the spring. Students get too tired when they have too many lectures in statistics in a short period of time. From the academic year 1994/95 this request seems at long last to be fulfilled though the number of credits granted to the course has not been expanded.

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The course is said to be very relevant for research and much needed for thesis writing. Students would like to have had more group assignments and problem solving in class. They also found that a continuous assessment system should be considered so that 50% of the total workload is handled before the final exam. This would reduce the pressure and anxiety many students felt before the final exam in this course.

Exam papers: The exam papers from this course leave a lot to be desired. No attempt seems to be made to relate the questions set to the over-all objectives of the programme. Attempts to link statistical knowledge to the management of natural resources and sustainable agriculture are not made. Even simple substitution of names and places from the American text-book with names and places in the South has not been done. Students are asked to work with electrical usage data for Washington Water Power Company, with American truck drivers, traffic flow in the Newberry and Ridgeview intersection, with elks (hardly an animal known to people from the South) and the probability that Norwegian citizens will own an apartment in Spain!

With a lot of data given

2.3.5. Friday Seminars

"Most presenters covered hot topics."

These seminars, which run all through the year, aim at promoting interdisciplinary discussions on case studies, articles presented by students, papers and presentations by guest lecturers on topics related to the MNRSA study programme. All students are expected to attend the

seminars and two credits are awarded for attendance. There is no exam connected to the seminars. The Friday seminars are said to be arranged for and by the students at the MNRSA programme (NORAGRIC) and the students of Nature Management in Developing Countries (Dept. of Biology and Nature Conservation (IBN)) - but they are normally open to everyone interested. The seminars normally last for two hours but may sometimes run for a whole day.

Students seemed generally to be very satisfied with these seminars and found that the different topics that are covered depict the interdisciplinary objective of the whole programme. The seminars are meant to develop the speaking skills of the students as every student is expected to participate in the discussions. Students also take turns chairing the seminars. Sometimes articles are presented by students. Some students felt, however, that there sometimes was too little discussion and too few students participated. They mentioned that they may have needed help to overcome their inhibitions in speaking up. Students we interviewed also mentioned that they would like to see more teachers participate in the seminar.

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Some students felt that more guest lecturers suggested by students should be invited. They also felt that the students should be asked what topics they would prefer to be discussed in the seminars. They further suggested that hand-outs and summaries of the lectures be provided well ahead of time.

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Several of the students we met, especially in Ethiopia, said that the Friday seminars to them seemed even more precious after they had graduated and gone back to their countries. They would often consult their notes from some of the seminars.

One student from Sri Lanka suggested that more information about the Friday seminars should be given to the students before they left for Norway. By this they would be better prepared to present cases and data from their own country in the seminars.

2.3.6. Applied Course in Ecology and Management of Natural Resources

"It dealt with real issues".

This course is looked at as a core course. Students find it extremely relevant and directly related to the work students were later going to perform. It addresses a number of management techniques very relevant to tropical countries.

The course is said to be well organized and good guest lecturers have been brought into the course. The group work in this course has promoted inter-disciplinarity. Some complain, however, about the group work and seem to lack training in group work methodology.

The course is, however, seen as too theoretical. There should have been more field trips, excursions, outdoor activity connected to the course. More use could have been made of audio-visuals like videos, slides, photos, charts and maps. The course could also have been more problem oriented.

One student we interviewed claimed that the ecology course was very essential but that too

much emphasis was given to forests and too little to other national resources such as water, mineral, land and human resources.

Exam papers: The exam questions for this course are much more interdisciplinary than the questions worked out for the autumn semester in ecology, conservation and management of natural resources. The number of questions could however be cut down considerably and those merely testing recall of knowledge be dropped. Students also complained that there is too little time on the exam.

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2.3.7. Research Methods and Research Project Planning.

"Important tool for future independent work in research"

The course is seen as very relevant by the students. It exposes the students to various research methodologies and gives them tools for analysis. Many of the former MNRSA graduates we met felt that this course should have been given more weight and be expanded to include a statistical application part as well as thesis writing and writing of articles for scientific journals. A computer course at the beginning of the first term might be tied to this course in research methods. Credits should be given for the course.

Many mentioned that the course ought to be taught in the first semester as it is a good preparation for working out the thesis proposal which had to be done early in the second semester. Many mentioned that the course should have been taught as an intensive course leading to the preparation by the students of their thesis proposal in detail on the basis of which evaluation should be done for credit.

The suggestion made by former MNRSA we met that the course should end up with the students writing their research proposal seems to have been taken account of in the most recent course programme (1994/95) but the course has still not been made a credit giving course.

Some students mentioned that the method of teaching should be modified to allow more personal interactions between students and instructor. There was a call for more group work and discussions.

More for the students to do

2.3.8. Tropical Production and Agriculture Systems

"A course which is holistic in approach and represents the reality of a farmer's perspective."

This course is regarded as highly relevant by all students. All the teachers teaching this course are said to have rich experience from developing countries. The course is said to make the students see that there is a way in which they can also involve the people. It has a practical dimension to it which is highly appreciated. Especially the students we interviewed in Tanzania and Ethiopia mentioned this course as one which had carried a special importance for them.

Students from Sri Lanka would have liked to have seen more case studies and examples being taken from their part of the world.

Several of the students we spoke to mentioned that they felt that agro-forestry had not been given the place it rightly deserved within the course.

Exam papers: Though many of these exam questions may be said to be interdisciplinary in their nature they test recall of factual knowledge more than understanding and application of knowledge.

2.3.9. Applied Social Anthropology

"Should tie up the concepts of anthropology to natural resource management - more case studies - examples."

This course receives much of the same comments as the social anthropology course of the autumn semester. Though the teacher is given praise for his teaching, students lack the integration of this course into the wider theme of management of natural resources. Many say that there is too much straight anthropology without linking it to the main theme of the course. They feel that the anthropology is not really applied at least not to the field they are studying. The textbook (Keesing) seems to be used here too and receives many negative comments. The course could be improved substantially through the use of more case studies from developing countries.

The exam at the end of this course is a term paper. We have not seen instructions or the types of choices made available for the writing of the term paper.

2.3.10. Political Economy

"Most could have been incorporated in economics and seminars."

This course has received a number of negative comments. Some students think the course should have been dropped all together, some feel it should be optional.

Many mention that the course would be considerably improved had comparative examples from developing countries been used.

The exam at the end of this course is a term paper. We have not seen instructions or the types of choices made available for the writing of the term paper.

2.3.11. Resource Planning

"It clearly showed how comprehensive natural resource planning can lead to sustainable utilisation."

Before the academic year 1993/94 there seems to have been one course called resource planning and appraisal. In the spring of 1994 two separate courses: resource planning and resource appraisal have been introduced. These two courses will also be offered in the spring of 1995.

This course received many positive comments when it was evaluated by students after the spring of 1994. Students felt that they had received interesting notes and hand-outs which they were sure they could use in their future work. Many of them mentioned with great enthusiasm a field trip the class had to Ski in Norway. Some students mention that they need more time for the course.

Exam papers: In the spring of 1995 there will be a written examination in Resource Planning and a term paper in Resource Appraisal. Before these courses were split up one written examination was given in Resource Planning and Appraisal. Half of the exam questions given in this exam in the spring of 1994 were of a recall type while the other half were more of a discussion type testing some understanding of relationships.

2.3.12. Resource Appraisal

"This course is something we are really in need of back in our countries, but it was too difficult."

This course is said to be of relevance for students from developing countries but it seems as if the teacher who taught this course in the spring of 1994 was not aware of the varying backgrounds in economics among the students. One of the students expressed it this way:

"The teacher thought we all had a Ph.D. in economics."

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Students complained about the textbook being used (Pierce and Nash) as it seems irrelevant for developing countries. There seems to be a high need to build this course on case studies from developing countries and to prepare a compendium of relevant teaching material.

2.4. The Quality and Relevance of the Teaching Materials (lecture notes, exercises etc)

Findings of the Review Mission:

"Look for another textbook in Social Anthropology. Keesing is just interested in Barbarism, Antiquities (we don't have such primitive societies) and not applied anthropology that is related to management of resources"

We have not ourselves been able to study other textbooks than the one being used in statistics (Johnsen and Bhattachanywa) and the one being used in Social Anthropology (Keesing). Neither of these books have an approach where they integrate the subjects with the management of natural resources and sustainable agriculture. In their evaluations the students

Her Jeff Kelly

are particularly annoyed with the textbook in Social Anthropology. The textbook is not in touch with the present realities according to them.

One of the textbooks being used in Resource Economics (by Cramer and Jensen) is said to give too much emphasis to the U.S.A. As mentioned, students also complain about the textbook being used (Pierce and Nash) in Resource Appraisal as its approach seems irrelevant for developing countries.

There is a need to find textbooks built on the experiences from the South, preferably written by researchers from the South. If no such textbooks can be found, those responsible for teaching such courses where no relevant interdisciplinary textbook with examples from the South exist should be responsible for preparing a compendium of relevant teaching material.

These teachers would need to get some reduction in their teaching load in order to prepare relevant course material. As far as possible such compendia should be edited by a researcher from the South (for instance a guest researcher) or at least co-edited by a researcher from the South.

2.5. The Covering of Gender Aspects in the Curriculum.

NORAGRIC established an internal project in 1991, "Gender Issues" in order to institutionalize gender issues at NORAGRIC and to improve the competence of the staff in this field. A workshop was held in October 1992 to sensitize staff to gender issues in general as well as to involve staff actively in developing a working strategy for dealing with gender in all NORAGRICs research, consulting and teaching activities. This project then sought i.e. to remedy an important weakness which until then had been neglected in the MNRSA programme; the integration of gender issues in the course content at various points. Originally a project funded internally by NORAGRIC, it was possible to expand activities through funding provided by the Norwegian Ministry of Foreign Affairs through a special fund for improving the competence of environmental researchers. Activities under the projects centred on discussions with teachers, examination of existing curricula and lectures to explore possibilities of integrating gender, and special lectures on gender for students. In addition two of NORAGRIC staff members (Gender Issues Project Leader and NORAGRIC's Director of Studies) attended a workshop on gender issues in London. Another important activity has also been the purchase of reference material on gender issues in development and resource management.

7 | A self-assessment conducted by NORAGRIC revealed an absence of gender issues in the regular teaching. Even under topics such as resource utilization and case studies, the gender focus was far too often unsatisfactorily covered. Another example was found to be the course MN5/MN 32 (Resource Planning and Appraisal).

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Findings and comments by the Review Mission:

It was probably high time for the "Gender issues" project to be initiated at NORAGRIC. Given the course objective and nature, the former neglect can only be illustrated by the fact that NORAGRIC needed external financing to take gender issues seriously. Indeed this particular project has given some results, and some of the teachers have developed special lectures on gender related to their own teaching topic. The course in Tropical Farming has for example one lesson devoted to gender-related issues. However, despite such encouraging improvements, gender appears not to be systematically covered. It is a problem that an important course such as statistics does not deal with gender issues in statistical sampling methods. In this perspective there must be all reason to doubt whether students are provided with the adequate tools for sampling in countries where married women may not even be officially registered as household members because registration only covers so-called head of households, or in situations with prevalence of polygynous households etc.

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Only a few students met could recall any emphasis on gender issues as part of regular teaching. Friday seminars, the introduction course and some guest lectures conducted by the Gender issues Project Coordinator were the only recollections of the topic.

The concerns for gender issues seemed quite up front among many graduates. The need for having adequate planning tools which could be applied in their present work situation was often mentioned. Some graduates mentioned the irony of such shortcomings when they themselves should work for changes in societies where huge degradation of natural resources constantly demanded even more labour from women to fetch fuel and water, where population pressures were serious in relation to the availability of natural resources and where women's problem could often be shortage of labour at her disposal rather than too many children. It was mentioned that they did not feel that adequate attention was put on the complex interaction between people and environment which reflected the real living conditions under which they themselves live and work.

2.6. The Suitability of the Teaching Methods used.

Comments by the Review Mission:

As mentioned in our description of the various courses, many of the lecturers seem to be delivering good lectures and seem to be very knowledgeable within their fields.

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They seem, however, to lack some pedagogical training. Many of the lectures seem to be too theoretical. Not enough use is being made of concrete and illustrative examples and case studies. These would give some flesh to bony theories. The application of the theories could be illustrated through relevant cases from developing countries.

In their evaluations, as well as in the many discussions we had with former MNRSA students, the students mention that they found that they learnt so much more on a field trip than by sitting as a rather passive listener in the classroom. They would have liked to have gone on

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more field trips while in Norway, would have liked to have visited a farm which was ecologically driven and another farm of the more industrial type. Learning through participation and through direct experience tends to have a more lasting effect than learning only through reading or listening.

Too limited use seems to be made of audiovisual teaching aids like videos, films, photos, charts and maps. Sometimes a picture can convey more than many words.

Some lecturers seem to be using over-heads when writing on the blackboard would be better since it is a slower process. Some students feel frustrated because some over-heads which are being used contain a lot of text and are shown for only a short time. Over-heads are most suitable when they contain some few points - an outline or a graph or a table.

Group work is being used but the students have frequently not been exposed to this teaching method before and lack training in how to work effectively in groups. When they are being asked to hand in a group work, they seem to divide the work up among themselves and work individually and not use each other as discussion partners or to solve problems together. Training in group work seems to be needed both for staff and students. A mini-course in group dynamics in the first introductory weeks may be a good idea.

2.7. The Inter-disciplinary Approach.

In our description of the various courses of the first year we have assessed them as to their inter-disciplinarity. While some courses are taught in a more inter-disciplinary manner other courses are not.

We have mentioned that the course programme of the first year as a whole seems to be more multi-disciplinary than inter-disciplinary. Some members of staff claimed that the first year programme now is less interdisciplinary now it used to be some years ago.

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Inter-disciplinarity does not come easily when one is trained in disciplinary studies and thinking. Since very few teachers have an inter-disciplinary training and outlook inter-disciplinarity has to be planned for through co-teaching or at least co-planning of lessons as well as co-setting of exams.

2.8. The Training and Experience of the Teaching Staff.

Findings of the Review Mission:

According to a list prepared for the Review Mission by the administration at AUL the permanent teaching staff consists of seven persons, six men and one woman. Of the seven persons more permanently connected to the programme six are from Norway and one from a developing country (Sri Lanka)

Er John White

A Tanzanian lecturer (male) is currently among the teaching staff, working on a temporary contract. A woman lecturer dealing with gender issues is also among the teaching staff but working on a temporary contract. The lecturer dealing with gender issues is coming from the United States. A Norwegian female librarian is connected to the program. She has lived in Tanzania for four years.

An Ethiopian researcher on a two year sabbatical at Ås has been teaching research methods to two student co-horts.

Recently a lecturer teaching statistics has joined the teaching staff. This lecturer does not have any experience from developing countries. Apart from this lecturer all of the other members of the teaching staff have experience from developing countries, most of them have stayed a couple of years in an African country.

Five of the seven teachers listed under the permanent teaching staff have Ph.D.s or D.Sc., the other two are working on their D.Sc.s. Their training is within resource economy, management of natural resources, economics, social anthropology, cultivation of plants and genetics.

In the comments made by the students many of them mention that they feel that the teaching staff has too limited experience from developing countries, especially from Asia. They also mention that more guest lecturers from developing countries should be brought in, preferably be made part of the permanent teaching staff.

Work available
regular.

Comments by the Review Mission:

The permanent teaching staff seems to have a good and varied professional background. Many have experience from developing countries, especially from Africa. However, both the current lecturer in statistics and the director of studies lack long-term work experience from developing countries. There are too few lecturers among the permanent staff with experience from Asian countries.

Female lecturers as well as lecturers from the developing countries are on the whole under-represented. Care should be taken to recruit some more females among the permanent teaching staff as well as having female Visiting Professors from developing countries. Some of the students we interviewed held the opinion that at least half of the teaching staff ought to come from developing countries. We feel that much could be reached through the extension of shorter Visiting Professor-ships to local supervisors belonging to the extended arm of the programme.

John White

2.9. Recommendations for Improvements of the First Year of the MNRSA Programme.

- OK • More responsibility for the academic development of the programme should be given to the teaching staff, as discussed further on page 41-42.
- One should do whatever possible to employ more female staff.
- > More staff from developing countries should be employed and the use of guest lecturers from developing countries be intensified.
- TSV • Mechanisms have to be created whereby the valuable evaluations made by the students of the course after each semester are really taken account of and lead to a continuous curriculum revision process.
- M • Co-teaching and co-planning of teaching should be encouraged in order to assure more inter-disciplinarity in the courses.
- OM • Exams should cut across several courses and be made truly inter-disciplinary. Co-planning of exams should be institutionalized.
- The exam questions have to be monitored by groups of professionals to ensure that they correspond to the aims and objectives of the course.
- Nei • More use should be made of term papers or exams where the student may use all available literature and consult experts in the fields. Less use should be made of exam questions just testing memory and recall of factual knowledge.
- EA • Professional staff meetings where the objectives of the course programme and the best way to fulfill these are discussed have to be conducted on a regular basis.
- ? A gender perspective has to be incorporated in all the courses.
- In courses where no textbook with examples from the South and of inter-disciplinary nature exists teachers should be encouraged to edit course readings. The editorial job should preferably be done by a researcher from the South either alone or as co-editor with a Norwegian researcher.
- More excursions and field trips within Norway are recommended.
- We recommend that more curricular options be created to cater for the varying background and interest of the students.
- There is a need for an up-grading of the educational skills of some of the staff, training in using audio-visual teaching aids and using group work.
- We recommend that a course in group dynamics be given to both staff and students.

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3. The Quality and Relevance of the Second Year of the MNRSA Programme.

3.1. Preparations for Thesis Writing

The second year of the Master degree programme starts on August 1. The students need an average grade of 2.5 for the course work to start on the M.Sc. Thesis work. This year is in its entirety devoted to fieldwork and writing up of a Mater thesis. The normal time granted for the fieldwork and thesis-writing is 10 months. Students are expected to use not more than 22 weeks (five months) in the field so that they have adequate time for data processing and thesis write up in Norway. The thesis should be submitted to the University before June 1 of the following year.

All Master degree students are required to conduct their own field research for their thesis. Preferably this should be done in the student's home country. According to the Course Programme the research project must be problem oriented and focused at the local level. The main purpose of the thesis work is to give students an opportunity to put into practice the theoretical knowledge gained in the course work.

The thesis is, according to the Course Programme, a test of the student's ability to apply concepts and analytical tools. During the field work the student should be prepared to live in the study area so that s/he gets a feel of the social and physical environment.

The teaching staff at NORAGRIC prepares a list of recommended research topics before the start of the spring semester. The students are advised to begin already in the autumn semester to think about a topic for the M.Sc. thesis work. The student is asked to prepare a short preliminary research proposal before January 15 of their first year. On the basis of the preliminary research proposal NORAGRIC assigns a Norwegian supervisor to each student. The Norwegian supervisor helps the student develop a detailed research plan in the spring semester.

All students, according to the publication "Master of Science Theses 1993" had one supervisor in their home country as well as one at the Agricultural University of Norway (AUN). Each thesis is being marked by the supervisor at AUN and an external examiner in Norway: grades for the 1993 theses range from 1.5 to 3.0, with 2.19 as the average.

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Findings of the Review Mission:

According to our findings it seemed in most cases as if the student her/himself came up with the research topic and would connect it to problems in her/his own home area. It would also often be up to the student to find a local supervisor.

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f. utl. oppgaver.*

Most students mentioned that it was difficult for them to choose a research topic already in January of the first year since the course in research methods was held after that time. As mentioned in our discussion of the curriculum of the first year many students suggest that this

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course should be taught in the first semester and should be expanded.

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It was also difficult sometimes to come up with a research proposal and to know whether it would be possible to carry the proposal through in the countries where they intended to do their research.

The students from Sri Lanka seemed to have received particularly good help in finding a researchable topic for their thesis work, a topic which would fit into existing research priorities of the country.

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Comments by the Review Mission:

The list of recommended research topics should not be worked out by the teaching staff at NORAGRIC alone but in cooperation with local supervisors and be preferably connected to research projects these supervisors conduct.

Care should be taken to trace such projects and locate relevant supervisors, preferably connected to a University or a Research Institute.

There is a need for institutionalization of the local supervision and preferably to bring it into problem-oriented inter-disciplinary research planned by the country itself. In countries with many participants two or three research institutes should be identified and the local supervisors within these institutes should supervise M.Sc. students preferably through a joint research project or link arrangement. It should be noted, however, that it may be difficult to establish and maintain close institutional cooperation in countries with only few participants.

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Master degree students represent a valuable research resource which needs to be utilized. This is especially the case in a developing country where research is scarce and frequently defined by outsiders. For instance in Tanzania we learnt about a larger Tanzanian defined project to be embarked on. The project was to deal with: "Local institutions as a basis for common resource utilization among the pastoralists in Tanzania" and was to be led by a former MNRSA candidate with a Ph.D If some MNRSA students could write their thesis within this project, they would both benefit the development of indigenous research in Tanzania and be assured of good local supervision and follow-up. In Ethiopia the Council for Science and Technology has worked out an *agricultural research policy* in which several research topics dealing with sustainable management of natural resources are defined. When we talked with officials in the Secretariat of the Council they expressed a great interest in having M.Sc. students attached to some of the research projects outlined in the agricultural research policy.

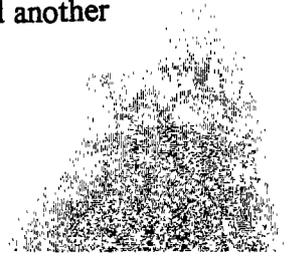
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3.2. The Field Work.

It is normally left up to the student to find a local supervisor for her or his field-work. According to an agreement 5,000 NOK should be paid to the local supervisor and another 5,000 NOK to the institution in which the supervisor is working.

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Her er det en forklaring

Findings of the Review Mission:

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In Tanzania we found that the institutes to which some of the Master degree students were connected during their field work had had no say when it came to the definition and working out of the research proposal. For instance researchers at the Institute for Resource Assessment felt that they were being used as research assistants and not as equal partners. Sometimes a student would come to them with a research proposal which had been worked out and accepted at AUN but could not be carried out in Tanzania. The whole research design and instruments to be used had to be worked out over again. The student was caught in the middle, not knowing if the local rewriting of his research design would be accepted at AUN. The research might have been individually defined by the student in cooperation with the AUN supervisor and not be part of the on-going research of the institute which would provide the student with the infrastructure of the country where the student would be doing his/her research. There was normally no communication between the supervisor from Norway and the local supervisor.

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Through our interviews with former MNRSA graduates in Tanzania we were told that sometimes the institution was paid and not the supervisor, sometimes the supervisor was paid and not the institution. It was, in some cases, stated that neither the supervisor nor the institution in which s/he worked had been paid. We came across an example where the local supervisor seemed to have done an excellent job, being himself an MNRSA graduate and sharing the vision of the programme, but he claimed that he had not received the remuneration even if he had signed a contract saying that he would get the 5,000 NOK. It was, furthermore, claimed that the payment to one institution had not been forthcoming even three years after the student had graduated. As a consequence of this inconsistent policy a well-qualified institution (IRA) was reluctant to supervise students from the MNRSA course. - It was, on the other hand, stated by NORAGRIC that all supervisors and institutions which had adhered to the agreed procedures for reimbursement had been paid, and that this easily can be documented.

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It was stated that the 5,000 NOK which is to be paid to institutes to which the students are connected during their field trip did in no way cover the overhead costs of the students field-work even though students would pay themselves for their transport and stay in the field through the field allowance they had been given. It should here be noted that each student has a budget of 10,000 NOK to cover field work costs, in addition to their normal allowance.

The situation seemed to be better in Ethiopia because one of the lecturers from NORAGRIC had been following up a number of students and had seen to it that local supervisors were paid. But also here there was little communication between the supervisor from Norway and the local supervisors.

The best situation when it came to following up the field-work and collaborating with the local supervisors we found in Sri Lanka. There the lecturer from NORAGRIC, himself a Sri Lankan, could help the students find suitable local supervisors and had himself a good co-operation with the supervisors about the progress of the field and thesis work of the student. He had himself been the NORAGRIC supervisor of almost all of the students from Sri Lanka.

In Tanzania and Ethiopia we came across examples where the local supervisor had got the

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money but been of little help to the student. The reason for this seemed in some instances to be that the supervisor had had little time and been constantly away. In other instances the supervisor had been rather discipline-oriented and had little belief in and knowledge of an interdisciplinary approach. A third reason could have been transport and communication problems.

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The students are supposed to be visited in the field by their Norwegian supervisors but in Tanzania we also came across incidences where the student had not been visited as much as once by the supervisor in Norway and had to rely on the little help s/he could get from a local supervisor who was not even paid for his work. A female student from Tanzania who had her field-work prolonged because of a pregnancy had not been visited once by her AUN supervisor who had a maternity leave. This student was not even visited by other AUN supervisors when they were staying in the same neighbourhood as the student and were competent within the student's field of study.

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vriteren.*

Comments by the Review Mission:

Through the interviews we had with former students from Tanzania we feel confident in concluding that the institutional cooperation between NORAGRIC and institutions in Tanzania with reference to the management and follow up of students' field work leaves much to be desired.

We feel that the best type of supervision would occur if the student could write his/her thesis within an interdisciplinary research project defined by institutions in her/his home country and led by a researcher sharing the vision of the MNRSA programme, preferably a former MNRSA graduate.

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3.3. Writing up of the Thesis and the Grading of it.

The writing up of the thesis is being done in Norway. Students normally return to Norway in January after they have finished their five months of field work.

The local supervisors do not participate in the grading of the thesis which is being done in Norway by the supervisor from AUN along with an external examiner from Norway. The supervisor from AUN will in most cases also be a Norwegian.

Findings of the Review Mission:

We asked students whether they felt that it was necessary to go back to Norway to write up their thesis. Many of them said that they could perfectly well, and sometimes even better, have written up the thesis in their own countries had they had the necessary infrastructure in the form of computers, recent books and journals and a possibility of getting connected to the relevant data bases.

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All of the students and the local supervisors we talked to felt that it was wrong that the local

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supervisors should not have any say when it comes to the grading of the thesis. Through the present arrangement the local supervisor has no possibility to defend his or her supervision when the thesis is being marked. Her/his status and importance in the whole process of supervision is also reduced to an unequal and minor one since s/he had no say in the grading of the research s/he had supervised. Too much of the grading is left to AUN supervisors who in many cases have quite limited experience from the environment in which the student has written his or her thesis.

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3.4. Recommendations for Improvements of the Second Year of the MNRSA Programme.

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- Institutes in developing countries where previous MNRSA graduates or others with similar training work should be identified.
- These people should then serve as local supervisors and help preparing a list of recommended research topics preferably connected to research projects these supervisors conduct.
- Communication between the AUN supervisor and the local supervisor should be institutionalized.
- There should be no delay in paying the remuneration to the local institutions and the local supervisors. ~~A raise in the remuneration should be considered.~~
- When good supervisors with relevant research projects are located, these supervisors should preferably have two or three MNSRA students to supervise.
- The local supervisor should have at least as much say when it comes to the grading of the thesis as the supervisor from AUN.
- As long as students from the course still graduate from AUN provisions should be made for the local supervisors to go to Norway to discuss the strengths and weaknesses of the thesis.
- The pool of qualified local supervisors should naturally belong to the extended arm of the programme and be utilized as guest lecturers at AUN from time to time - the timing might coincide with the period the students they have supervised are doing their writing up of the thesis in Norway.
- Infrastructure should be built up at the institutes of the local supervisors with the intention that these institutes will gradually take over the responsibility for all of the second year.

nei for MNSRA ref i en annen H.

Er ikke det.

Kostnad.

Arv vedtatt?

*Arv er det som
Det er ikke noe for seg selv
stikk i arbeidsh.*

4. The Social and Administrative Framework of the Programme.

4.1. The Stay in Norway at the AUN.

The students at the MNRSA course are offered social backstopping both through special NORAD arrangements and at NORAGRIC. NORAGRIC is responsible for the daily welfare of the students and arranges accommodation. NORAD has until 1994 offered introductory courses to all fellow-ship holders at Kringsjå in Oslo. The students are introduced to shopping in Norway, getting around in the city, simple language training etc. In addition there are social evenings, the Christmas party arranged at Lysebu and the winter seminar which includes a skiing holiday at a mountain resort.

4.1.1. Findings of the Review Team.

The students have contrasting experience of social life in Norway. Generally speaking there is great satisfaction with the social arrangements offered.

As far as their interaction with the Norwegian society is concerned accommodation seems to be an important element for enhancing cross-cultural contacts. The myth that Norwegians are cold and difficult to make contact with were confirmed by most graduates who had not shared flats with Norwegians. On the other hand, all of those who had stayed with Norwegian fellow-students confirmed that they had made Norwegian friends, had been invited to Norwegian families on social occasions and that as soon as the initial ice was broken, they had been able to establish lasting friendships. For most of those who lived only with foreigners, the ice had actually become thicker as time ran.

These observations make it difficult to understand why the policy of mixed accommodation has been changed. This concern is even reinforced by the fact that one of the few reasons why this course actually should be located in Norway, has to be seen in view of the "Norwegian axis" which NORAD also wants to promote. This entails exposing Norwegians to the problems of developing countries. Obviously such exposure should also include social relations and possibilities to establish direct friendships with people coming from countries about which they otherwise have only theoretical knowledge.

Another key factor for successful social interaction was the Friday seminars. Nearly all students found the discussions there very valuable, also for the social contact between the students and Norwegian society, since quite a few guest lecturers were willing to stay around and chat, have tea with the students and socialise.

The social relations between students and staff caused concern. Some students claimed that apart from the concern of some individual teachers, who devoted a lot of their free time to the students, their contact with staff was not frequent. The lack of influence in NORAGRIC

*As a student. I would see how and
how to improve the situation.*

administration was felt as a loss of opportunities for the students to provide feedback to the staff regarding the programme. The absence of many of the teachers due to their other tasks as consultants was felt not only as detrimental to the education, but also to the opportunities to become better acquainted.

On the other hand some NORAGRIC staff members felt that some students were rather socially isolated and for the most time were sitting in their own rooms. This may be partly true, but even more true is the fact that apparently many of the students found the drinking and parties enjoyed by many rather young Norwegian students rather meaningless and a waste of money. In this context it should be kept in mind that participants at the MNRSA course are generally mature and have firm ties to families and work places. As a result the majority of them actually preferred a more 'mature' social life. Some of the more religious students would not drink or dance even in their home countries. Many of the Ethiopian students had established their own bible group and some also visited the local church on those occasions when the sermons were translated to English.

It was understood by NORAGRIC that some of the female students had been unwillingly "persuaded" to cook for their fellow male students. This was thought to happen due to culturally assigned gender roles in the students home countries. That near involuntary cooking had taken place was denied by all, men and women alike. Apparently the women cooked quite voluntarily, and many of them had gone to great efforts to prepare their own national foods with Norwegian ingredients. Particular inventiveness was shown in making the national Ethiopian dish "*injera and wat*" and the Tanzanian "*ugali*". All claimed that the men also contributed; they bought the ingredients and did the dishes. For the majority of the graduates these national gatherings were important expressions of mutual friendship. Most graduates recalled with joy that other nationalities had invited them to taste their national specialities.

Many female students had experienced problems before and during their decision to study in Norway. Since an employers recommendation is needed, the first step is usually to compete with other eager candidates at the workplace, in order to be nominated in the first place. Secondly, since both a finalized B.Sc. and working experience are required, most female students are of an age when they are both married and have children. As families can not be brought to Norway, they go through all kinds of family pressures in addition to finding arrangements for child care while abroad. Many women mentioned that the opportunity to take an education would not only benefit themselves and their career structure, but felt that taking this opportunity would also best serve the needs of their children by securing working conditions and the ability to provide for them.

Homesickness and worry about the children is not surprisingly a common problem for the women. However, since so many feel that they have passed the needle's eye by starting the course in the first place, they are determined to study hard. Some mentioned that having to go abroad motivated them to disciplined studies. The fact that the course actually offers opportunities to do field research in home area was mentioned as an advantage by several graduates. It made the studies more bearable from a mother's point of view since they then could reunite with their children, and academically they could profit through being able to apply their local knowledge and their local social networks. The combination of studies abroad and field work at home therefore made the course more attractive for women graduates. The

fact that the writing of the thesis was done in Norway was seen as no hindrance at all. Several female candidates mentioned that during this period the need to be alone and concentrate on their work would be very high under any circumstances.

One student we met in Tanzania, who had become pregnant during her return to do the field work, had met exceptional problems which had delayed her studies considerably. She had been helped to get maternity leave and a computer to write up her thesis in Tanzania so that she would not have to leave her baby. However, these arrangements were improvised, and it seems as if NORAD has no special funds for such provisions or a clear strategy for handling such cases.

4.1.2. Comments.

Based on the review findings there are reasons to believe that some of the myths surrounding the students adaptability to Norwegian culture are due to be punctured. In particular this relates to the issues of lack of social interaction, sexual discrimination of girls and the need to be accommodated among fellow nationals.

4.1.3. Recommendations.

The team believes there is an absolute need to rearrange the present accommodation practices and ensure that Norwegians and fellowship holders again share flats as far as possible. It is recommended that NORAGRIC should discuss this with the organizations dealing with student accommodation at AUN, to try to change the present practices.

Also location of the flats should be considered. Since the students are mature and have a very hard work load, quietness and possibilities for studying in their rooms should be a necessary consideration.

Interaction between Norwegians and fellows could be enhanced if all social opportunities were shared. This includes the winter seminar. The Norwegian students should therefore be offered to join the winter seminar at a reasonable price.

4.2. The Programme Administration.

The Director of Studies coordinates the MNRSA programme. He reports to the Director of NORAGRIC, and is assisted by a senior consultant, mainly acting as a social secretary, and a consultant, dealing with the daily course administration and the student evaluation of the courses.

4.2.1. Findings of the Review Team.

Our impression is that much emphasis was given to the professional development of the MNRSA programme during its first hectic years. New approaches were tested, visiting lecturers were brought in from different corners of the world, and the obligatory Friday Seminars were a focus point for discussion, new ideas and staff interaction. Less weight was given to the establishment of systems and routines for the daily management of the programme, to economic monitoring and control and to the establishment of formalized arrangements with the different partners involved in the course. The rather informal management culture during the first years of the programme may perhaps be criticised, but is not uncommon in the pioneer phase of a new and innovative programme, where some opportunistic management decisions are sometimes needed to make progress.

The introduction of more systematic and formalized management procedures has given the present administration a heavy work-load. The management has in recent years, to a large extent, dealt with the challenges of the daily administration. A number of arrangements as regards students, staff and collaborating institutions have been formalized, such as the linkages to the other centres and institutes at the Agricultural University of Norway. In addition there now seems to be a close economic monitoring of the programme, and leaner budgets have in some cases been introduced, such as for the field work. Such measures for cost cutting may be unpopular and be a source of conflicts, but may also be necessary to make the training affordable or economically sustainable in the long perspective, when it is supposed to be transferred to indigenous organizations in less wealthy developing countries.

Another reason for the heavy administrative work-load is that the daily management issues are quite complex and demanding for a programme which deals with candidates of so many nationalities, educational backgrounds and cultures, and which is involved in field work in so many different countries, for which there is a need for some degree of institutional cooperation, and for which the funding is quite limited. The general communication, logistics and bureaucratic problems which are common in many developing countries add to this, making the procedures for student intake and for field work follow-up quite time demanding.

It seems as if the academic part of the programme, including the visions for the programme, the promotion of a true inter-disciplinary spirit and the long-term planning has been given a lower priority because of the many other tasks of the administration. There appears to be some frustration as a result of this, mainly among the students and the graduates, but also among some of the senior teaching staff. They feel that a number of good proposals for improvements have been presented in the quite advanced and systematic course evaluations, but that there has been too little progression in the implementation of those recommendations.

There are good reasons for involving both the teaching staff and the students more actively in the professional development of the programme. A reorganization of the course administration is therefore needed, whereby one person is responsible for the general administration and another, preferably from the teaching staff, and with wide experience from work in developing countries, has responsibility for the professional development and long-term planning of the programme, in addition to his/her teaching duties.

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A consolidation and concentration of the programme should also be considered. The administration of the course and the follow up of the field work and the institutional contacts would be easier if the student intake was restricted to fewer countries.

The institutional linkages to the other centres and departments at the Agricultural University of Norway have been strengthened during latter years. However, a number of students have expressed that they feel rather isolated during their stay at AUN, and they would appreciate more contacts with the other AUN departments. Those who emphasize this are mainly the ones who find the course rather too general, and who want more knowledge and professional contacts in a their particular field of work. They want a better introduction to the other departments of the AUN, for instance presentations during one or more Friday Seminars.

A large number of the MNRSA graduates interviewed in Tanzania, Ethiopia and Sri Lanka express that they would greatly appreciate better contact with NORAD and NORAGRIC after they have finalized their studies. To establish such a network would in the short perspective add to the administrative burdens of NORAGRIC, but could also be quite useful in the long term. This contact could give useful feed-back regarding the curriculum and teaching; be useful for the spread of information about the programme, and some of the graduates could aid in the supervision of the students' field work. It is here noted with appreciation that NORAGRIC already (November 1994) has produced a newsletter. This is sent to all MNRSA graduates, and there are plans to publish and distribute this newsletter three times every year.

4.2.2. Recommendations.

A reorganization of the course administration is recommended. One person should have responsibility for the general administration. Another person, preferably from the teaching staff, should have responsibility for the professional development of the programme. He/she should preferably have an interdisciplinary background and wide work experience from developing countries. He/she should be supported by an advisory working committee dealing with the professional development of the programme, with one representative from the students, two from the teaching/administrative staff and one from one of the cooperating departments at the AUN.

A geographical concentration of the programme should be considered, restricting the student intake to fewer countries, for example, 4-6 countries in Africa and 3-4 countries in Asia.

The institutional linkages to other centres and departments at the AUN should continue to be strengthened, as well as the linkages to the MNRSA graduates working in their home countries.

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Deke u i dag*

5. International Cooperation and Impacts.

5.1. Contribution to Competence Development in Developing Countries.

The programme deals mainly with training of personnel working in Government organizations and training/research institutions.

As discussed in Chapter 1.3., there is a need for changes in attitudes, priorities and implementation policies in many Government organizations dealing with the management of natural resources and rural development issues in tropical countries, to cope with a changing world.

Such changes do not come easily. Most Government structures are quite rigid and bureaucratic, and many have inherited a top-down profile from Colonial times. They have only a weak tradition for inter-disciplinary approaches to problem solving and little responsibility is delegated to field level or to the middle management levels.

To-day's weakness of Government enlarges these problems. The sharp decrease in real wages for Government employees in many countries has been negative for the work morale. This is to be expected, as the wage levels in several countries are now clearly insufficient to sustain a living. In this situation one cannot expect training programmes to create radical changes in a short time, and the impact of such programmes on Government organizations may, thus, be difficult to measure.

However, the difficult task of strengthening Government structures should be given priority, even if many development organizations, wanting to obtain quick results, are often tempted to by-pass the existing structures and establish new ones. This is a strategy which may work well as long as there is an easy influx of foreign capital, but it often leads to brain drain from existing indigenous organizations, and it may in the long run be unsustainable.

5.1.1. Observations and Discussion.

The MNRSA programme has led to exceptionally little brain drain, since a large majority of the trainees have returned to the institutions from where they were recruited, as discussed in Chapter 1.6. This return of the graduates to their mother institutions is, perhaps, the best measure of the programme's impact.

Otherwise, it is impossible for the Review Team to make a precise assessment of the programme in terms of competence development in the recipient countries, as discussed above. The main weakness is that our findings may be biased, as we were not able to visit those MNRSA graduates who work in the more remote areas and in the field, and we had to concentrate our interviews on graduates who are working in the capitals or in central institutions, due to our time constraints.

We found that 9 or 10 of the 27 graduates/diploma holders we interviewed or who filled in questionnaires expressed that they had been or were rather frustrated, as they had not been able to utilize their knowledge properly in their present or past jobs, due to lack of resources or because they were working in an environment that did not appreciate their knowledge. "Political pressures are too high to practice the knowledge", is a statement from one questionnaire, made by a woman working in a Government organization.

A graduate, in such a situation, will not be able to contribute much to competence development in his/her organization in the short perspective. It should, however, be noted that three of the graduates who were originally rather frustrated, now had quite positive job experiences. Many have also been promoted, and some are now in influential positions, such as department heads. By this they have a better chance to make a lasting impact on their organizations.

A majority of the MNRSA graduates we interviewed had positive work experience, and many stated that they had changed their attitudes and had become more confident during their stay in Norway.

Two questions in the questionnaire for graduates dealt with this issue, and the answers were surprisingly positive, as seen in the figure to the right. The highest rating in the questionnaire was 5, which stood for "very useful" or "much used", whereas 0 stood for "not useful" or "not used".

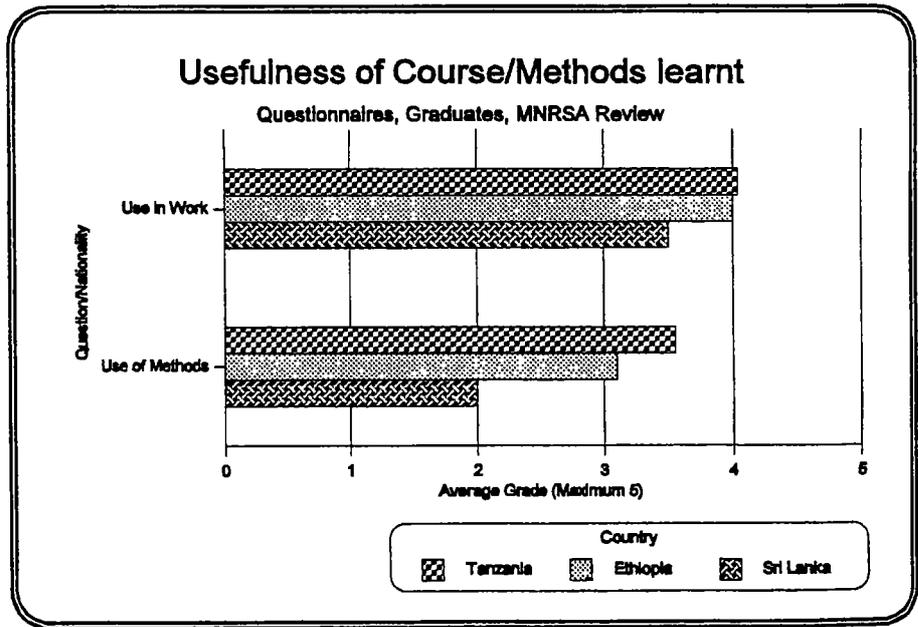


Figure 6: Use of MNRSA-course in present job. (The questions were as such: "Has the knowledge/insight you gained during the course been useful for you in your work?" and "Have you been able to practice some of the methods you learned during the MNRSA course in your work?")

The grades given for the use of methods (like PRA and RRA, Participatory Rural Appraisal and Rapid Rural Appraisal) was clearly lower than those given for the general usefulness of the MNRSA-course. This may indicate that the graduates have been using their knowledge in the offices more than in field activities. However, the score for use of those methods was also fairly high in Tanzania and Ethiopia.

Handwritten notes in various languages, including English and Swahili, are present at the bottom of the page.

A matter for 1.

The figure to the right deals with the graduates' perception of their success as regards promotion and salary increase. A score of 2-3 stands for "fairly useful" and 4-5 stands for "very useful".

A large number of the graduates greatly appreciated that they now had a wider perspective than before, partly because of their knowledge gained through course studies and field work, and partly due to the interaction with other students, sharing experiences from different countries. It is likely that with this background they may have a positive impact on their organizations.

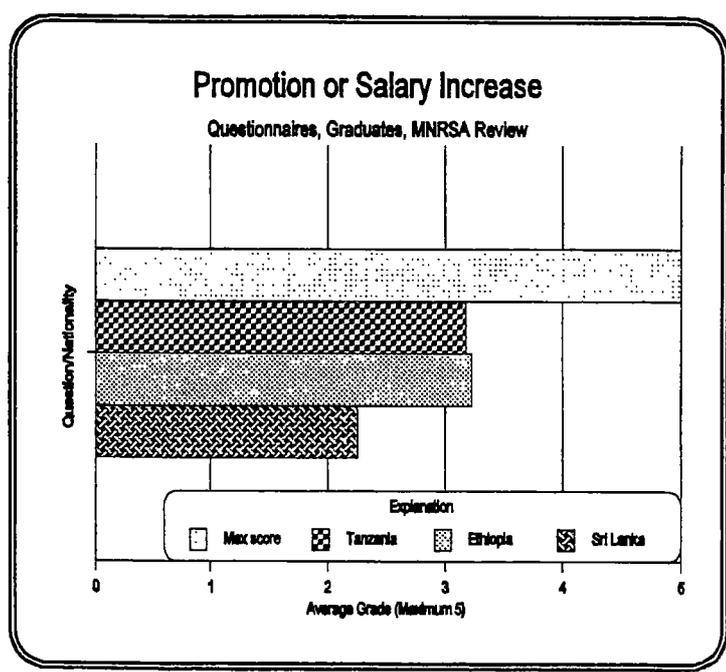


Figure 7: Promotion and Salary Increase
(Question: Has the Diploma Course/M.Sc. Degree been useful for you with respect to promotion or in order to get a better salary?)

A An MNRSA graduate with experience from a number of jobs stated that those working in academic institutions, dealing with teaching or research, would be much more efficiently utilized than their colleagues working in Ministries or parastatal organizations. Four women graduates working in NGOs said that their knowledge was efficiently utilized.

During the interviews we got the impression that many of the graduates were quite well motivated for their work. Two questions in the questionnaire dealt with this issue, and the results were positive, as seen in the figure to the right. However, there seems to be some decline in work motivation over time, indicating some negative job experiences. The Tanzanian figures may be somewhat biased as two rather frustrated graduates did not hand in their questionnaires.

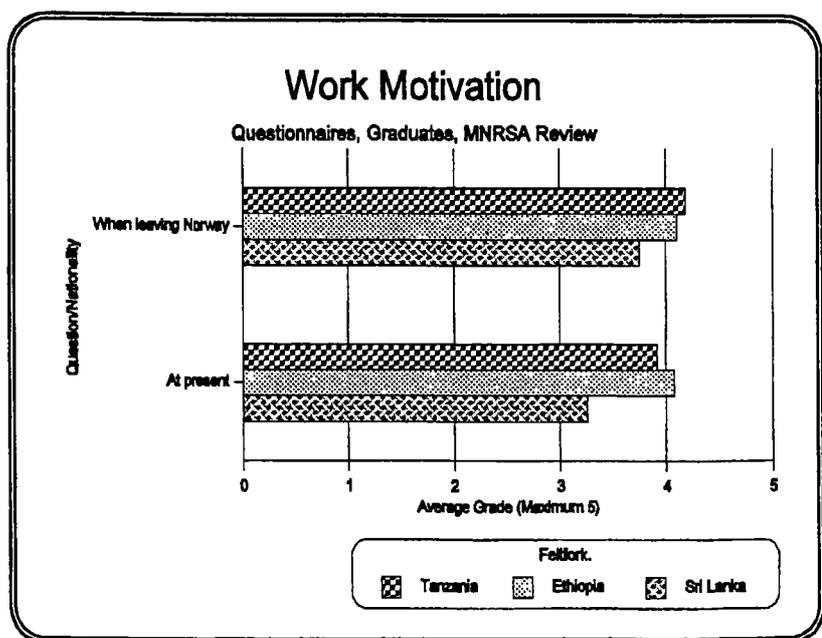


Figure 8: Work Motivation.
Questions: Were you motivated for your (new) job when you finished the MNRSA studies? Are you still motivated for your work to-day, with the challenges and constraints you have faced?

The findings indicate that the MNRSA programme has, in general, made a positive impact on the organizations in which

the graduates are posted. This was, furthermore, also stated in our interviews with a number of employers/supervisors.

Seven of the graduates had now changed their jobs, and four of them were now working for NGOs. They seemed to be highly motivated, and this was verified by their answers to the questionnaire. This is illustrated in the figure to the right, which is based on a small amount of material only.

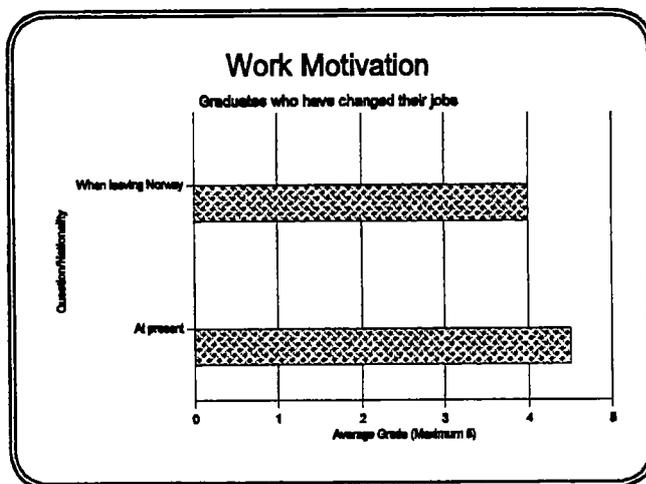


Figure 9: Work motivation, 7 graduates who are now in a new job.

In addition to these positive findings, it should be noted that the final success of the programme depends much on whether there is an impact at field level, and on whether project planning and implementation is improved. It is, naturally, easier to

develop the "right theories" for sustainable development than to implement this knowledge in practice. The Review Team was not able to address this issue properly.

Even if a large number of the graduates are motivated and are doing a good job in the organizations where they work, the impact on a large corporation may be quite modest. It will, possibly, take more than one or two graduates to make a noticeable impact on a large corporation, a "critical mass" of employees who are dedicated and who want to introduce new management ideas.

Some of the graduates working with the management of natural resources are, furthermore, stationed in rather remote areas, and are therefore quite isolated. Initiatives to include them in a network would probably boost their morale and create more impact. Substantial means are invested in the basic MNRSA training, and it may make good sense to spend some extra money and time on networking activities to utilize this investment more proficiently.

It seems as if significant organizational impact can be found in *Department of Wildlife*, Tanzania and at the *Institute of Continuing Education (ICE)* of Sokoine University of Agriculture, Morogoro, Tanzania. At ICE three short MNRSA courses based on the same concepts as the course in Norway have been held. These courses are targeted at field staff at Certificate and Diploma levels and have drawn participants not only from Tanzania, but also from Ethiopia and Eritrea. The participants seem to have been quite motivated for the training, and there is now a professional milieu attached to this course at the ICE. This course also seems to have given the MNRSA programme in Norway useful feed-back, as a number of NORAGRIC's visiting lecturers have been exposed to the problems and experiences of technical staff working in the field.

The short MNRSA course in Tanzania was evaluated in 1993. The review team concluded that: "In general the implementation of the project is considered to be progressing well." It

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was, however, noted that: *"The emphasis being given now to academic qualification as a criterion for choice of participants is tending to distract the MNRSA course from its original target group. It is emphasised that the original target group of field technicians should be maintained."*

The impact in Ethiopia is even more difficult to assess than in Tanzania, as fewer Ethiopians have graduated from the course, and as they are spread over many organizations. Two graduates are working in *Ethiopian Wildlife Organization*, and one of them is the manager of the organization. The organization seems now to have started a process of much needed reorientation, whereby participatory or integrated management systems are introduced. Some credit for this can probably be given to the MNRSA training, and some to the organization's cooperation with the University of Oslo. Two MNRSA graduates working at *Awassa College of Agriculture* and one working in *Alemaya University of Agriculture* seem to have done excellent work after graduation, and may have had some impact on their institutions. Two of them are now selected for Ph.D. studies.

In Sri Lanka a "Centre for Sustainable Agriculture and Rural Development" has been planned by the Faculty of Agriculture of the *Eastern University*, and personnel from the MNRSA programme have been much involved in this.

5.1.2. Recommendation.

It is recommended that the programme should give more emphasis to networking activities and contacts with MNRSA graduates after they finish their studies in Norway. This contact will be useful to improve training, and will strengthen the confidence and competence of the graduates. It is expected that through this the overall impact of the programme will be significantly strengthened.

5.2. Contribution to Competence Development in Norway.

5.2.1. Background.

The Review Team has only had limited time for contacts with graduates from Norway and the institutions where they work, and its assessment of impacts is, therefore, rather uncertain.

However, the issue of impact in Norway is considered to be quite important. Norway's budget for development assistance is substantial, and for the skilful use of these funds a high level of in-country competence of third world development issues is needed. An Ethiopian scholar, with experience from Norway and much involved in agriculture and rural development, expressed it this way: *"We need this competence in Norway if we are going to cooperate with you"*.

There is, in particular, a need for better understanding of rural development issues and land use problems, as these matters are closely linked to the conservation of the natural environment and to the peoples' living standard. It has been repeatedly stated that these areas will be given high priority in Norway's development assistance.

Development assistance in these fields needs special competence, due to the specific problems of the rural areas; with a poor local economy and with a large percentage of the population outside the money economy. Such societies cannot absorb large financial inputs, as these normally contribute to inequality and inflation, and disrupt existing local economic and social structures. Large material inputs (vehicles, machinery, costly infrastructure) are equally meaningless. For a successful rural development process there is, on the contrary, a need for large inputs of "software" in the form of competence and local insight. The projects should ideally have lean budgets, low profiles, long-term commitments, and build on knowledge of existing economic structures and the local markets.

Such competence may also make a positive contribution to the indigenous discussion on rural development in Norway. There are also a number of costly conflicts related to conservation issues in Norway. Inter-disciplinary approaches and the use of principles of participatory management of natural resources could possibly contribute to a settlement of these conflicts.

5.2.2. Observations and Discussion.

A total of 32 "Norwegian"⁴ students have attended or are attending the MNRSA programme. Six of the 26 who have graduated are now working in developing countries. An additional three are working for international organizations (one for the World Bank and two for the Norwegian Ministry of Foreign Affairs). Ten are working at universities, many of them dealing with research related to developing countries or international training.

Some of the graduates are now in senior positions, allowing them to have some influence on the organizations in which they work. The Review Team know very little about the graduates' performance in the many countries where they work, but some of them seem to have made positive contributions in the development projects or the organizations where they work.

The professional milieu attached to the MNRSA course has contributed much to raise NORAGRIC's and Norway's level of competence of third world development issues. A number of the resource personnel have frequently been used for international consultancies, as summarized in page 4. A number of them have also been used as resource persons in workshops and seminars, and have made a number of contributions to international publications.

The impact on NORAD and the Norwegian Ministry of Foreign Affairs seems to be limited, as there is no systematic recruitment of personnel from these organizations. This is unfortunate, as the MNRSA programme deals with issues which are of much importance for these

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Five of the students come from industrialized countries outside Norway, like Denmark, USA and Australia.

organizations.

5.2.3. Recommendation.

It is recommended that there should be a systematic selection of candidates from NORAD and Norwegian Ministry of Foreign Affairs for inter-disciplinary training at the MNRSA programme, and that one or two candidates from the organizations should be given leave of absence for this purpose every year.

5.3. Other International/Regional Courses related to the MNRSA Course.

The review team was in the TOR asked to make a survey of possible other international courses in the field of inter-disciplinary training for the management of natural resources and sustainable agriculture, but has not been able to do this in a proper way. A number of persons were asked to comment on this issue, and the answers differ much. A number of those interviewed stated that the programme is unique, and that the programme is the only one of its kind. Others doubted this, and stated, somewhat vaguely, that similar training takes place in other countries. They also stated that some post-graduate training in extension deals with natural resource management and inter-disciplinary approaches. Three examples given of institutions working in the same fields as NORAGRIC/AUN were the Universities of Reading, East Anglia and Wageningen.

It is important to get more information on this question, as well on existing international and regional networks in the field of integrated natural resource management and sustainable agriculture.

5.3.1. Recommendation.

It is recommended that a special study should survey existing courses in the field of integrated management of natural resources and sustainable agriculture. NORAGRIC/AUN could carry out this study, and it is recommended that NORAD covers a part of the costs. The same study should also survey possible international or regional networking activities in this field. If no such network exists, it is recommended that NORAGRIC should take the initiative to establish such a network and that NORAD should support such an initiative.

J. A. Brøkel

Terms of Reference

REVIEW OF MANAGEMENT OF NATURAL RESOURCES AND SUSTAINABLE AGRICULTURE, DIPLOMA COURSE AND M.SC PROGRAMME AT AGRICULTURAL UNIVERSITY OF NORWAY (AUN)

1 Background

The course in Management of Natural Resources and Sustainable Agriculture (MNR) was initiated in September 1986 following discussions between NORAD and those at AUN responsible for the then diploma courses in Soil Science and Animal Husbandry. The topic of the course was influenced by Norway's increasing concern for environmental issues, and the Sahel drought.

The main objective of the course is to give basic training in interdisciplinary approaches to planning and management of natural resources and sustainable production systems in developing countries. The course is problem-oriented with special reference to interacting institutional, ecological and technological factors in agriculture production and natural systems management and is designed specifically for planners, managers and teachers concerned with integrated resource management.

The course consists of a 10 months postgraduate diploma course and a 10 months M.Sc. thesis work. Admission to the M.Sc. study depends on the student's scholastic performance in the first year. The M.Sc. students are required to carry out their own field research in a tropical or subtropical area and present a thesis written in English.

In the first year the course was offered globally, but in 1987/88 it was decided that participants be drawn only from main partner countries plus Nepal and the Sahel areas. Today the course is offered to students from Bangladesh, Botswana, Ethiopia, India, Mali, Mozambique, Namibia, Nepal, Nicaragua, Pakistan, Shri Lanka, Sudan, Tanzania, Zambia and Zimbabwe. In addition the course has been open to Norwegian students.

2 Purpose of the Review

The purpose of the review is to assess the relevance of the 10 months diploma course and the M.Sc. thesis work for the candidates and their institutions, taking into account the special constraints and problems of the home countries of the participants. The review shall furthermore assess the educational/pedagogical framework of the diploma course and the M.Sc. thesis work and how cost effective the present arrangement provide and satisfy the need for this type of trained manpower. The review will also comment on how well the arrangement fits into general objectives and strategies of Norwegian development assistance.

Based on NORADs policy framework for education and the findings of the team, the review shall advise NORAD whether the diploma course and the M.Sc. thesis work shall continue in its present form, or whether changes or alternatives should be considered. In particular the review will discuss the possibilities of establishing similar offers in developing countries or of integrating the education in the ordinary system at AUN.

3 Scope of Work

The work shall comprise, but not necessarily be limited to, the following tasks:

- A. Assess the structure and functioning of the diploma course and M.Sc. thesis work and to which extent the course strengthens the knowledge of participants in their fields of work
- B. Assess the quality and relevance of the course, including
 - the curriculum,
 - the quality and relevance of the teaching materials (lecture notes, exercises etc.)
 - the training and experience of the teaching staff,
 - the suitability of the teaching methods used,
 - its interdisciplinary approach.
- C. Describe and assess the institutional cooperation between NORAGRIC and institutions in recipient countries with reference to the management and follow up of students' field work.

- D. Assess whether the diploma course and M.Sc. thesis work have contributed to institution building and strengthened professional environment in selected recipient institutions in main NORAD countries of cooperation
- E. Assess the role of the diploma course and M.Sc. thesis work for competence development in Norway as this was stated a basic principle for the course from the beginning
- F. Investigate whether former participants have returned to the institutions they were recruited from and whether they have been enabled to utilize the competence gained.
- G. Assess achievements in terms of maintaining institutional and personal professional links between educational institutions in Norway and in other countries
- H. Assess how gender aspects are covered in curriculum and how the practicalities fit the needs of female candidates.
- I. Survey other international/regional courses/training within the same subject area
- J. Assess the social framework and "learning environment" in which the training takes place
- K. Assess the existing arrangements for administering and conducting the diploma course and M.Sc. thesis work, including the procedures for recruitment and selection of candidates.

4. Mode of Work

The review will collect information from various sources using different methodological approaches. The methods include:

A. Interviews with staff responsible for administering and conducting MNR, relevant NORAD staff, participants in the present course, employers of participants in a sample of recipient institutions as well as personnel in policy positions and other resource people in these countries.

B. Questionnaires or structured interviews to former and present participants and their employers.

C. Review of relevant documents (policy papers, reports, budgets etc).

D. Assessment of course material and training methods.

Separate studies will be undertaken in three selected countries; Tanzania, Ethiopia and Shri Lanka.

5. Implementation

5.1 Review team

The review will be undertaken by a team of three experts with the following competence:

- natural resource management expert - generalist/broad perspective, long practical experience from African countries, preferably experience with university training in natural sciences,
- education expert, with relevant experience from developing countries and particular insight in pedagogy, educational planning and evaluation of educational programmes,
- social anthropologist/sociologist with long experience from development assistance work, gender perspectives, Norwegian aid policies etc.

In addition local experts from Tanzania, Ethiopia and Shri Lanka, preferably social scientists with experience from reviews/evaluations of manpower development within agriculture/natural resources, will be hired to collect relevant information contributing to the tasks A, C, E, F, G and J, under "Scope of Work" above. This will result in writing of separate country case study reports from the two countries.

5.2 Work programme

Phase 1.

The consultants shall interview MNR resource persons, NORAGRIC-staff, NORAD personnel. Collect and study existing documents relating to the course and the M.Sc. programme, including teaching materials.

Prepare questionnaires to present and former participants and employers. Undertake survey and interviews for present participants (1993/94). Prepare detailed work plan and budget for the next phases.

Phase 2.

Issue questionnaires/letters to selected former participants and employers of former participants.

Conduct detailed interviews with the teaching and administrative staff involved at AUN.

Interview participants at the 1994/95 course. Assess teaching practice (as time permits).

Review the facilities provided for participants.

Organize and analyze data from surveys and interviews.

Phase 3. (In terms of timing this Phase may well overlap with Phase 2)

Undertake field work in Tanzania, Ethiopia and Shri Lanka.

Interview personnel responsible for manpower training in fellows' institutions and previous course participants.

Interview resource personnel in the Government responsible for manpower development and education, and personnel from relevant technical ministries, (particularly Ministries of Agriculture/Natural Resources).

Interview NORAD personnel at Norwegian Embassies/NORADs Res. Rep. offices

Review and assess relevant documents.

Write country case reports.

Phase 4.

On the basis of the foregoing, the consultants shall prepare an Draft Report in the English language for consideration by NORAD, FAG.

Phase 5.

After receiving comments from NORAD the consultants shall prepare a Final report.

Sissel Volan
Head of Education Division
NORAD

Annex 2.

Itinerary and interviews.

- 13.May Meeting, Education Division, NORAD, Oslo, with Sissel Volan, Head of Division, and Janne Knutrud, Consultant. Discussion of Terms of Reference, work organization and time/travel schedule (Refsdal only).
- 18.May Meeting at NORAGRIC, Agricultural University of Norway, Ås, with 2nd year students. Interviews with students, distribution of questionnaires. Short discussions with Dag Guttormsen, Kristoffer Haugum, Trygve Berg, Arne Olav Øyhus, Pål Vedeld, Paul Wisborg, Aregay Waktola and Ingrid Nyborg (Refsdal).
- 26.May Visit to NORAGRIC. Interviews with Ms.Felista Meshili and Shiv Raj Bhatta, 2nd year students, and Ms.Rajasulosana Kumarasamy and Modest Mrecha, 1st year students. Discussions with Paul Wisborg, NORAGRIC and Pål Vedeld, AUN. Discussion with Yohannes Hailu, Ph.D. student (Refsdal).
- 27.May Interviews with Ms.Helen Peters Kape, Basanta K.Sahu, Steven Musokwa and Justin Alibei, 2nd year students. Discussions with N.Shanmugaratnam, Dag Guttormsen, NORAGRIC, and others (Refsdal).
8. June Meeting/discussion in Oslo, Janne Lexow and Trygve Refsdal.
- 9.June Visit to NORAGRIC. Interviews with Justin Alibei and Arun Rijal, 2nd year students. Discussion with Dr.Stein Bie, Trygve Berg and Arne Olav Øyhus (Lexow and Refsdal) Discussion with Dag Guttormsen. Interview with Santosh Rayamajhi, 2nd year student (Refsdal).
- 10.June Visit to NORAGRIC. Interview with Raphael Kgabung, 1st year student, and Santosh Rayamajhi, 2nd year student (Lexow).
- 2.August Interview with Erik Berg, Norwegian Ministry of Foreign Affairs, previous MNRSA student (Refsdal).
- 12.August Interview with Frøydis Kvaløy, Norwegian Ministry of Foreign Affairs, previous MNRSA student (Lexow).
- 19.August Meeting, professor Per Wegge, Department of Biology and Nature Conservation, AUN. Meeting, professor A.N.Minjas, NORAGRIC, and Stein Bie, Director of NORAGRIC (Refsdal).
- 23.August Interview, professor Oddvar Haveraaen, Institute of Forestry, AUN. Interview, Dr.H.Kolshus, previous NORAGRIC representative, Tanzania. Interview Zeray Araya, ORGUT Consulting AB, Stockholm (Refsdal).
- 5.September Meeting with NORAD personnel: Professor G.S.Klem, Head Natural Resources Division, Ms.Sissel Volan, Head Education Division, Ms.Janne Knutrud, Consultant Education Division, Dr.Thor Larsen, Advisor to the Director of NORAD (Brock-Utne, Lexow and Refsdal).
- 12.September Visit to NORAGRIC. Meeting with Dag Guttormsen, Director of Studies, MNRSA Cours, Ms.Elisabeth de Jong, Head, NORAGRIC Office, professor Nils Kolstad, Dean, AUN, Dr.Ruth Haug, Project Leader, MNRSA Course, Dr.N.Shanmugaratnam, professor, Agricultural Economics, MNRSA Course.
- 13.September Visit to NORAGRIC. Meeting with 1st year students - interviews and discussion. Meeting with Stein Bie, Director of NORAGRIC, Gunnar Øygard, Advisor, NORAGRIC and Fred Håkon Johnsen, professor, Resource Economics, MNRSA Course.

14. September Visit to NORAGRIC. Short discussions with Trygve Berg, Ingrid Nyborg, Dag Guttormsen, Kristoffer Haugom, Yohannes Hailu and other personnel. Travel from Oslo to Zürich and Dar es Salaam, Tanzania.
15. September Arrival in Dar es Salaam. Meeting with Adelaida Semesi, Professor, Department of Botany, University of Dar es Salaam, - local consultant. Meeting at Norwegian Embassy/NORAD with Osvold Haugbotten, Programme Officer, Anne-Britt Thoresen, First Secretary, Bente Nilsson, Programme Officer, Ingunn Welle, Senior Clerk.
16. September Interview with Ms. Miriam Zacharia, MNRSA Graduate (1990), Paul Marenga, MNRSA Graduate (1992) and Patrick C. Akitanda, MNRSA Graduate (1994), Wildlife Department, Ministry of Tourism, Natural Resources & Environment, Dar es Salaam. Meeting with Muhidin A. Ndolanga, Director of Wildlife, Ministry of Tourism, Natural Resources & Environment. Interview with Emmanuel Severre, MNRSA Graduate (1988) and Benjamin Andulege, MNRSA Graduate (1993), Wildlife Department, Dar es Salaam. Meeting at Department of Research and Training, Ministry of Agriculture, Dar es Salaam, with: Ms. Adelaida Bituru, MNRSA Graduate (1994), A. Kabatanga, Training Officer, G.M. Mitawa, Assistant Commissioner, Crop Research, and D.B. Mpiri, Assistant Commissioner, Livestock Research.
17. September Meeting of the whole team at the Norwegian Embassy, Dar es Salaam, interview with Dugushila Mafunda, MNRSA Graduate (1991), Senior Scientific Officer, Commission for Science and Technology, Dar es Salaam. Report Writing.
18. September Report writing and team discussions. Travel to Sokoine University of Agriculture, Morogoro.
19. September Meeting with MNRSA Graduates; Gabriel Rugalema (1992), Acting Head, Institute of Continuing Education, SUA, Dr. George Kajembe (1988), Coordinator MNRSA short course, Institute of Continuing Education, SUA, John Kessy (1992), Faculty of Forestry, SUA, Ms. Margaret Mollé, MNRSA Student, Department of Agricultural Education and Extension, SUA. Meeting with Dr. L.D.B. Kinabo, Director, Directorate of Research and Postgraduate Studies, SUA. Meeting with Dr. N.T.A. Bangu, Dean, Faculty of Agriculture, SUA. Meeting with Dr. S. Iddi, Acting Dean, Faculty of Forestry, SUA. Discussion with Dr. Alf Bakke, Institute of Forestry, Agricultural University of Norway. Meeting with Joseph I. Mallya, Head, National Seed Testing Laboratory, Morogoro.
20. September Travel to Dar es Salaam. Wrap-up meeting with NORAD, Programme Officer Osvold Haugbotten. Discussion with Dag Nissen, Councillor Meeting with Dr. Idris Kikula, Director, Institute of Resource Assessment, Dar es Salaam, and Dr. Sitna Mohamed, Senior Research Fellow, Institute of Resource Assessment, Dar es Salaam. Meeting with B.L.M. Bakobi, Acting Director General, National Environmental Management Council, Dar es Salaam. Meeting with Dr. H. Kolshus, ORGUT Consulting AB (previous NORAGRIC Coordinator, Tanzania).
21. September Travel from Dar es Salaam to Addis Ababa. Meeting with Dub Gelma, Programme Consultant, Redd Barna-Ethiopia (Local Consultant), Addis Ababa, Ethiopia. Team discussions and report writing.
22. September Meeting at Ministry of Natural Resources and Environment Protection, with Fishaye Kassaye, Head, Department of Human Resources Development, Dawit Kebede, Head, Soil and Water Conservation Division, and Getachew Taye, MNRSA Graduate, Acting Head, Ethiopian Wildlife Organization, Addis Ababa. Meeting at Ministry of Natural Resources and Environment Protection, Forestry and Wildlife Department, with Leykun Berhanu, Team Leader, Tadesse Hailu, Team Leader, Dr. George Conn, GTZ Project Coordinator, Fuelwood, and Gebremedhin Adera, Team Leader. Meeting at Ministry of Planning and Economic Development, with Astatke Bayu, Senior Expert in Natural Resources, and Lulseged Ageze, Acting Head, Monitoring and Evaluation Department.
23. September Meeting at Ethiopian Science and Technology Commission with Dr. Beyene Kebede, Head, Agriculture and Environment Department, and Getaneh Yemane, Head, Plan and Policy

Department. Short discussion with Soressa Ergena, MNRSA Graduate, Ethiopian Science and Technology Commission. Meeting at Farm Africa (NGO) with Dr. Richard Hogg, Coordinator, Soil Conservation Department and Aklug Laike, Expert, Soil Conservation Department. Short discussion with Dr. David Brown, University of Reading. Dinner with Per Amund Gulden, Norwegian Embassy.

24. September Meeting and ORGUT lunch with MNRSA Graduates: Getachew Taye, Ethiopian Wildlife Organization, Ministry of Natural Resources and Environment Protection, Ms. Yewubdar Hailu, Norwegian Church Aid, Ms. Bayush Tsegaye, Seed for Survival - Canada, Ms. Kibra Kebede, Relief Society of Tigray, Soressa Ergena, Ethiopian Science and Technology Commission, Yohannes Benyam, National Urban Planning Institute, Ms. Martha Dhiphisa, Farm Africa, and Kifle Zeleke, Ministry of Planning and Economic Development. Report writing.
25. September Meeting with Dr. Aregay Waktola, NORAGRIC Representative, Addis Ababa, and Ms. Liv Ellingsen, Librarian, NORAGRIC, in Addis Ababa, Ethiopia. Meeting with Dub Gelma, Redd Barna - Ethiopia, Local Consultant, Review Mission. Report writing.
26. September Travel from Addis Ababa to Dubai. Travel from Dubai. Team discussions and report writing.
27. September Arrival in Colombo, Sri Lanka. Meeting with Dr. Wijaya Jayatilaka, University of Peradeniya, Local Consultant. Meeting with Sarath Fernando, Deputy Conservator of Forests, Planning and Silviculture, Forest Department, Colombo. Meeting with NORAD officers, Colombo: Arild Skåra, Programme Officer, Ms. Malkanthi Samaranyake and W.M. Leelasene. Meeting with MNRSA Graduates/Diploma Holders: Weerasinghe A. Karunathilake, Gammanpila Hettiarachchi and Ranjith Bandara.
28. September Meeting with Dr. Uma Kumaraswamy, Acting Head, Zoology Department, Open University, Colombo. Meeting at Mahaweli Development Authority, Colombo, with P. T. Senaratne, Secretary General and S. W. K. J. Samaranyake, Director General. Meeting with S. Amarasekare, IRDP Project Coordinator. Meeting at Ministry of Environment with Dr. Devanesan Nesiiah, Secretary and W. S. Perera, Coordinator, Environment Programme. Meeting with M. G. M. Razaak, Head, Agricultural Resource Management Division, Agrarian Research and Training Institute, Colombo. Dinner hosted by NORAD, with Resident Representative Per Prestgard.
29. September Travel to Peradeniya. Meetings at University of Peradeniya with Dr. Shantha Hennayake, Senior Lecturer, Department of Geography, Dr. H. Kotagama, Coordinator, Environment Economics Masters Programme, Postgraduate Institute of Agriculture, Dr. Y. D. A. Senanayake, Director, Postgraduate Institute of Agriculture, Shaman Vidanage, President, Postgraduate Agriculture Students Association, M. Lekamwasam, Director, Human Resources Development Centre, Department of Agriculture, Dr. N. Shanmugaratnam, Visiting Professor (NORAGRIC) and Ranjith Bandara, MNRSA Student.
30. September Meeting with MNRSA Graduates: Ms. Susila Sriyani Jayawickrema, Assistant Director, Ministry of Lands and Land Development, Colombo, Ms. Maya Weerasinghe, (on maternity leave) and Mr. Weerasinghe Arachchilage Karunathilake, Research Station Angunukolapelleessa. Wrap-up meeting with NORAD, Colombo, with Per Prestgard, NORAD Resident Representative, Arild Skåra, Programme Officer and Ms. Malkanthi Samaranyake, Senior Visa and Fellowship Officer. Lunch hosted by ORGUT A/S with Dr. N. Shanmugaratnam, NORAGRIC, Ms. Susila Jayawickrema MNRSA Graduate, Ranjith Bandara, MNRSA Student, Mr. Rajasulohana Kumarasamy, MNRSA Student (Eastern University), and Gammanpila Hettiarachchi, MNRSA Diploma Holder. Report writing.
1. October Discussions with local consultant Dr. Wijaya Jayatilaka. Report writing.
2. October Travel from Colombo to Amsterdam and Oslo.
9. December Final meeting with Dag Guttormsen, Director of Studies, and Fred Håkon Johnsen, Associate Professor, MNRSA Programme, NORAGRIC.

List of persons met.

In Norway:

Alibei, Justin Gwolo, 2nd year student (Sudan), MNRSA, AUN, Norway
Bandara, Ranjit, 1st year student (Sri Lanka), MNRSA, AUN, Norway (met also in Sri Lanka)
Berg, Erik, Advisor, Norwegian Ministry of Foreign Affairs, Oslo, Norway
Berg, Trygve, Dr., Project Leader, NORAGRIC, AUN, Norway
Bhatta, Shiv Raj, 2nd year student (Nepal), MNRSA, AUN, Norway
Bie, Stein, Dr., Director of NORAGRIC, AUN, Norway
Bituru, Adelaida, Ms., i) 2nd year student, MNRSA, AUN, Norway ii) MNRSA Graduate, Department of Research and Training, Ministry of Agriculture, Tanzania
Fuad, Athanasio, 2nd year student (Sudan), MNRSA, AUN, Norway
Guttormsen, Dag, Director of Studies, NORAGRIC, AUN, Norway
Hailu, Yohannes, Ph.D. student (Ethiopia), AUN, Norway
Haug, Ruth, Dr., Project Leader, MNRSA, AUN, Norway
Haugum, Kristoffer, Senior Consultant, NORAGRIC, AUN, Norway
Haveraaen, Oddvar, Dr., Professor, Institute of Forestry, AUN, Norway
Johnsen, Fred Håkon, Dr., Associate Professor, MNRSA, AUN, Norway
Jong, Elizabeth de, Ms., Head of Administration Office, NORAGRIC, AUN, Norway
Kape, Helen Peters, Ms., 2nd year student (Sudan), MNRSA, AUN, Norway
Kgabung, Raphael, 1st year student (Botswana), MNRSA, AUN, Norway
Klem, Gustav S., Dr., Head, Division of Natural Resources, NORAD, Oslo, Norway
Knutrud, Janne, Ms., Consultant, Education Division, NORAD, Oslo, Norway
Kolstad, Nils, Dean, Agricultural University of Norway, Ås, Norway
Kumarasamy, Rajasulosana, Ms., 1st year student (Sri Lanka), MNRSA, AUN, Norway (met also in Sri Lanka)
Kvaløy, Frøydis, Ms., (former MNRSA student), Consultant, Norwegian Ministry of Foreign Affairs, Oslo, Norway
Larsen, Thor, Dr., Advisor, NORAD, Oslo, Norway
Meshili, Felista, Ms., 2nd year student (Tanzania), MNRSA, AUN, Norway
Minjas, A.N., Dr., Visiting Professor, MNRSA, AUN, Norway
Mrecha, Modest, 1st year student (Tanzania), MNRSA, AUN, Norway
Musokwa, Stephen, 2nd year student (Zambia), MNRSA, AUN, Norway
Nyborg, Ingrid, Ms., Researcher, NORAGRIC, AUN, Norway
Rayamajhi, Santosh, 2nd year student (Nepal), MNRSA, AUN, Norway
Runyoro, Victor A., 2nd year student (Tanzania), MNRSA, AUN, Norway
Sahu, Basanta Kumar, 2nd year student (India), MNRSA, AUN, Norway
Shanmugaratnam, N., Dr., Associate Professor, NORAGRIC, AUN, Norway (met also in Sri Lanka)
Solberg, Karl, Consultant, Natural Resources Division, NORAD, Oslo, Norway
Svendsrud, Asbjørn, Professor, Department of Forest Sciences, AUN, Norway
Vedeld, Pål, Researcher, Department of Economics and Social Sciences, AUN, Norway
Volan, Sissel, Ms., Head, Education Division, NORAD, Oslo, Norway
Wegge, Per, Dr., Professor, Department of Biology and Nature Conservation, AUN, Norway
Wisborg, Poul, Consultant, NORAGRIC, AUN, Norway
Øygard, Gunnar, Advisor, Noragric, AUN, Norway
Øyhus, Arne Olav, Dr., Researcher, Social Anthropology, NORAGRIC, AUN, Norway

In Tanzania:

Akitanda, Patrick C., MNRSA Graduate, Department of Wildlife, Dar es Salaam, Tanzania
Andulege, Benjamin, MNRSA Graduate, Department of Wildlife, Dar es Salaam, Tanzania
Bakke, Alf, Dr., Institute of Forestry, Agricultural University of Norway (met at SUA, Tanzania)
Bakobi, B.L.M., Acting Director General, National Environmental Management Council, Dar es Salaam, Tanzania
Bangu, N.T.A., Dr., Dean, Faculty of Agriculture, SUA, Morogoro, Tanzania

Haugbotten, Osvald, Programme Officer, Norwegian Embassy/NORAD, Dar es Salaam, Tanzania
 Iddi, S., Dr., Acting Dean, Faculty of Forestry, SUA, Morogoro, Tanzania
 Kabatange, A., Training Officer, Department of Research and Training, Ministry of Agriculture, Tanzania
 Kajembe, George, Dr., MNRSA Graduate, Institute of Continuing Education, SUA, Morogoro, Tanzania
 Kessy, John, MNRSA Graduate, Faculty of Forestry, SUA, Morogoro, Tanzania
 Kikula, Idris, Dr., Director, Institute of Resource Assessment, UDSM, Dar es Salaam, Tanzania
 Kinabo, L.D.B., Dr., Director, Directorate of Research and Postgraduate Studies, SUA, Morogoro, Tanzania
 Kolshus, Halvor, Dr., Coordinator, ORGUT Consulting AB, Dar es Salaam, Tanzania
 Mafunda, Dugushila, MNRSA Graduate, Senior Scientific Officer, Commission for Science and Technology, Dar es Salaam, Tanzania
 Mallya, Joseph I., Head, National Seed Testing Laboratory, Morogoro, Tanzania
 Marenga, Paul, MNRSA Graduate, Department of Wildlife, Dar es Salaam, Tanzania
 Mitawa, G.M., Assistant Commissioner, Crop Research, Department of Research and Training, Ministry of Agriculture, Tanzania
 Mohamed, Sitna, Dr., Senior Research Fellow, Institute of Resource Assessment, UDSM, Dar es Salaam, Tanzania
 Mollel, Margaret, Ms., MNRSA Student, Dept. of Agricultural Extension & Extension, SUA, Morogoro, Tanzania
 Mpiri, D.B., Assistant Commissioner, Livestock Research, Department of Research and Training, Ministry of Agriculture, Tanzania
 Ndolanga, M.A., Director of Wildlife, Ministry of Tourism, Natural Resources & Environment, Tanzania
 Nilsson, Bente, Programme Officer, Norwegian Embassy/NORAD, Dar es Salaam, Tanzania
 Nissen, Dag, Councillor, Norwegian Embassy/NORAD, Dar es Salaam, Tanzania
 Rugalema, Gabriel, MNRSA Graduate, Acting Head, Institute of Continuing Education, SUA, Morogoro, Tanzania
 Severre, Emmanuel, MNRSA Graduate, Department of Wildlife, Dar es Salaam, Tanzania
 Thoresen, Anne-Britt, Ms., First Secretary, Norwegian Embassy/NORAD, Dar es Salaam, Tanzania
 Welle, Ingunn, Ms., Senior Clerk, Norwegian Embassy/NORAD, Dar es Salaam, Tanzania
 Zacharia, Miriam, Ms., MNRSA Graduate, Department of Wildlife, Dar es Salaam, Tanzania

In Ethiopia:

Adera, Gebremedhin, Team Leader, Forestry and Wildlife Department, Ministry of Natural Resources and Environment Protection, Addis Ababa, Ethiopia
 Ageze, Leulseged, Acting Head, Monitoring and Evaluation Department, Ministry of Planning and Economic Development, Addis Ababa, Ethiopia
 Bayu, Astatke, Senior Expert in Natural Resources, Ministry of Planning and Economic Development, Addis Ababa, Ethiopia
 Benyam, Yohannes, MNRSA Graduate, National Urban Planning Institute, Addis Ababa, Ethiopia
 Berhanu, Leykun, Team Leader, Forestry and Wildlife Department, Ministry of Natural Resources and Environment Protection, Addis Ababa, Ethiopia
 Brown, David, Dr., University of Reading, Agricultural Extension and Rural Development Department (met in Addis Ababa, Ethiopia)
 Conn, George, Dr., Project Coordinator, Fuelwood, Forestry and Wildlife Department, Ministry of Natural Resources and Environment Protection, Addis Ababa, Ethiopia
 Dhiphisa, Martha, Ms., MNRSA Graduate, Farm Africa, Addis Ababa, Ethiopia
 Ellingsen, Liv, Librarian, NORAGRIC, As, Norway (met in Addis Ababa, Ethiopia)
 Ergena, Soressa, MNRSA Graduate, Ethiopian Science and Technology Commission, Addis Ababa, Ethiopia
 Gulden, Per Amund, Attache, Norwegian Embassy, Addis Ababa, Ethiopia
 Hailu, Tadesse, Team Leader, Forestry and Wildlife Department, Ministry of Natural Resources and Environment Protection, Addis Ababa, Ethiopia
 Hailu, Yewubdar, Ms., MNRSA Graduate, Norwegian Church Aid, Addis Ababa, Ethiopia
 Hogg, Richard, Dr., Coordinator, Soil Conservation Department, Farm Africa, Addis Ababa, Ethiopia
 Kassaye, Fishaye, Head, Department of Human Resources Development, Ministry of Natural Resources and Environment Protection, Addis Ababa, Ethiopia
 Kebede, Beyene, Dr., Head, Agriculture and Environment Department, Science and Technology Commission, Addis Ababa, Ethiopia
 Kebede, Dawit, Division Head, Soil and Water Conservation, Ministry of Natural Resources and Environment Protection, Addis Ababa, Ethiopia

Kebede, Kibra, Ms., Relief Society of Tigray, Ethiopia
Laike, Aklug, Expert, Soil Conservation, Farm Africa, Addis Ababa, Ethiopia
Soressa, Ergena, MNRSA Graduate, Science and Technology Commission, Addis Ababa, Ethiopia
Taye, Getachew, MNRSA Graduate, Acting Head, Ethiopian Wildlife Organization, Ministry of Natural Resources and Environment Protection, Addis Ababa, Ethiopia
Tsegaye, Bayush, Ms., MNRSA Graduate, Seed for Survival - Canada, Addis Ababa, Ethiopia
Waktola, Aregay, Dr., NORAGRIC Representative, Addis Ababa, Ethiopia
Yemane, Getaneh, Head, Plan and Policy Department, Science and Technology Commission, Addis Ababa, Ethiopia
Zelege, Kifle, MNRSA Graduate, Ministry of Planning and Economic Development, Addis Ababa, Ethiopia

In Sri Lanka:

Amarasekare, S., Coordinator, IRDP Project Work, Colombo, Sri Lanka
Fernando, Sarath, Deputy Conservator of Forests, Planning and Conservation, Forest Department, Colombo, Sri Lanka
Hennayake, Shanta K., Dr., Department of Geography, University of Peradeniya, Peradeniya, Sri Lanka
Hettiarachchi, Gammanpila, MNRSA Diploma Holder, Mahaweli Economic Agency, Colombo, Sri Lanka
Jayawickrama, Susila Sriyani, Ms., MNRSA Graduate, Assistant Director, Ministry of Lands and Land Development, Colombo, Sri Lanka
Karunathilake, Weerasinghe, MNRSA Graduate, Research Officer, Research Station Angunukolapellesa, Sri Lanka
Kotagama, H., Dr., Coordinator, Environment Economics Masters Programme, Postgraduate Institute of Agriculture, University of Peradeniya, Peradeniya, Sri Lanka
Kumarasway, Uma, Dr., Acting Head, Zoology Department, Open University, Colombo, Sri Lanka
Lekamwasam, M., Director, Human Resources Development Centre, Department of Agriculture, University of Peradeniya, Peradeniya, Sri Lanka
Lelasene, W.M., NORAD Office, Colombo, Sri Lanka
Nesiah, D., Dr., Secretary, Ministry of Environment, Colombo, Sri Lanka
Perera, Sterling, Programme Coordinator, Central Environment Authority, Ministry of Environment, Colombo, Sri Lanka
Prestgard, Per, Resident Representative, NORAD, Colombo, Sri Lanka
Ranasinghe, Semasinghe, MNRSA Graduate, Agrarian Research Institute, Ministry of Lands and Land Development, Gampaha, Sri Lanka
Razaak, M.G.M., Head, Agricultural Resource Management Division, Agrarian Research and Training Institute, Colombo, Sri Lanka
Samaranayake, Malkanthi, Ms., Senior Visa and Fellowship Officer, NORAD Office, Colombo, Sri Lanka
Samaranayake, S.W.K.J., Director General, Mahaweli Development Authority, Colombo, Sri Lanka
Senanayake, Y.D.A., Prof., Director, Postgraduate Institute of Agriculture, University of Peradeniya, Peradeniya, Sri Lanka
Senaratne, P.T., Secretary General, Mahaweli Development Authority, Colombo, Sri Lanka
Skåra, Arild, Programme Officer, NORAD Office, Colombo, Sri Lanka
Vidanage, Shaman, President, Postgraduate Agriculture Students Association, Peradeniya University of Agriculture, Sri Lanka
Weerasinghe, Maya, Ms., MNRSA Graduate, (now on maternity leave), Colombo, Sri Lanka

List of Acronyms

AUN	Agricultural University of Norway, Ås, Norway
DANIDA	Danish International Development Agency
EFAP	Ethiopian Forestry Action Plan
EIA	Environmental Impact Assessment
EPDS	Electric Power Distribution Systems, NORAD supported training course
FAO	Food and Agriculture Organization, United Nations
FB	Fisheries Biology and Fisheries Management, NORAD supported training course
HD	Hydropower Development, NORAD supported training course
HRD	Human Resources Development
ICE	Institute of Continuing Education, SUA, Tanzania
ILO	International Labour Office, Geneva
IRDP	Integrated Rural Development Programme
IUCN	International Union for the Conservation of Nature
KIDEP	Kigoma Integrated Rural Development Programme, Tanzania
MNRDEP	Ministry of Natural Resources Development and Environmental Protection, (Ethiopia)
MNRSA	Management of Natural Resources and Sustainable Agriculture (M.Sc. Programme)
NCS	National Conservation Strategy (Ethiopia)
NCSSD	National Conservation Strategy for Sustainable Development (Tanzania)
NEMC	National Environment Management Council (Tanzania)
NGO	Non-Governmental Organization
NOK	Norwegian Kroner (1 US \$ = 6.80 NOK)
NORAD	Norwegian Agency for Development Cooperation
NORAGRIC	Norwegian Centre for International Agricultural Development, AUN, Norway
NRDEPS	Natural Resources Development and Environmental Protection Strategy (Ethiopia)
PCE	Port and Coastal Engineering, NORAD supported training course
PEP	Petroleum Engineering and Petroleum Geoscience, NORAD supported training course
PPT	Pulp and Paper Technology, NORAD supported training course
PRA	Participatory Rural Appraisal
PS	Professional Shipping, NORAD supported training course
RRA	Rapid Rural Appraisal
RUDEP	Rukwa Integrated Rural Development Programme, Tanzania
SIDA	Swedish International Development Agency
SUA	Sokoine University of Agriculture, Morogoro, Tanzania
TOR	Terms of Reference

Question 4: Were you motivated for your (new) job when you finished the MNRSA-course?
Poorly 0 1 Fairly well 2 3 4 Well 5

Are you still motivated for your work to-day, with the challenges and constraints you have faced?
Poorly 0 1 Fairly well 2 3 4 Well 5

Question 5: What were the most important positive sides of the MNRSA Diploma Course? (In order of priority)

a)

b)

Question 6: What were the most important weaknesses of the Diploma Course?

a)

b)

Question 7: What were the most important positive sides of the M.Sc. Thesis work?
What were your main problems during the M.Sc. Thesis work?

Question 8: Which subjects should be given more weight in the Diploma Course?
Which subjects should be given less weight in the Diploma Course?

Question 9: Do you have any other suggestions for improvements?
For the Diploma Course?
For the M.Sc. Thesis work?

Question 10: Has the Diploma Course/M.Sc. Degree been useful for you with respect to promotion or in order to get a better salary?
Not useful 0 1 Fairly useful 2 3 Very useful 4 5

Thank you again for your cooperation!

**Format for Self Evaluation of the MNRSA Diploma
Course and M.Sc.Programme at the Agricultural University of
Norway (1994 Review, NORAD).**

(STAFF)

A. Are the objectives/goals of the Programme clear and relevant?

B. Which main issues do you consider an outside evaluator should deal with in the Review of the Programme?

What qualities/qualifications should the outside evaluators have?

C. Do you have any comments on the present intake of students/selection of participants for the Programme?

D. What really matters in your Programme (1-3 aspects)?

E. What have been the 1-3 major successes, and how can they be strengthened?

F. What have been the 1-3 major difficulties, and how can these be addressed?

Questionnaires, MNRSA Students:

**Review of
Diploma Course and M.Sc. Programme,
Management of Natural Resources and Sustainable Agriculture,
Agricultural University of Norway
May 1994.**

(The answers will be used for review purposes only, and will not be made available to any other persons than the evaluation mission members. If you prefer to be anonymous, you do not need to give any information about name or other personal information. Thank you very much for your cooperation!)

Name: Age:

Nationality: Male/female

Education/working background:

Questions:

- 1) What are the most important positive sides of the Diploma Course? (In order of priority)
 - a)
 - b)
 - c)

- 2) What are the most important weaknesses of the Diploma Course?
 - a)
 - b)
 - c)

- 3) What are the most important positive sides of the M.Sc. Thesis work?
 - a)
 - b)
 - c)

- 4) What are the main problems during the M.Sc. Thesis work?
 - a)
 - b)
 - c)

- 5) Which subjects should be given more weight in the Diploma Course?

- 6) Which subjects may be given less weight in the Diploma Course?

Country Report - Tanzania.

Introduction.

Tanzania has an estimated population of 25.9 million with an average growth rate of 2.8% per annum. There are several activities which affect the natural resources negatively and these include: unplanned urban development which result into pollution and habitat destruction; industrial activities in unsuitable sites; unplanned and uncontrolled tourism which brings about stress in fragile ecosystems such as the coral reefs; poor agricultural practices which bring about soil erosion and land degradation due to frequent shifting cultivation and overgrazing, pollution of waters by pesticides; clearing of forests for fuel and construction resulting in deforestation and habitat destruction etc.

The draft report on Tanzania National Conservation Strategy for Sustainable Development (NCSSD) of January 1994 prepared by the National Environment Management Council (NEMC) contains in detail the main constraints which inhibit the use of the resource on a sustainable basis in Tanzania. In summary it is believed the rapid growth of the human population and their increasing pressure on these resources, the overall poverty and the lack of appropriate management and technologies in exploiting these resources, has resulted in a tendency towards irrational and inefficient utilization of resources.

The NCSSD report raises a number of substantive issues which have to be addressed at national levels, including :

- *The official planning process*, which is recognised as having been too sectorially oriented, rigorous and top-down;
- *Legislation*, both regarding land use issues, land tenure, socio-political factors, institutional problems of enforcement as well as issues such as pollution;
- *Environmental awareness*, both among the public at large, decision-makers at all levels, field workers i.e. extension workers, and *lack of environment education opportunities at all educational levels*. NCSSD stresses the need for competence building locally and being capable of offering such courses in Tanzania as among the priorities; and
- *Research and technologies*.

There is lack of a comprehensive institutional framework, which could act as a focal point in coordinating all activities related to the environment such as water, forests, wildlife, energy, industry, minerals and agriculture. Furthermore many of the Ministries and their departments do not have the adequate infrastructure, funding or trained personnel to implement their duties successfully. Delays in government decisions lead to discrepancies between planned activities and what actually takes place. For example tourism in Tanzania has long been a victim of official inconsistencies and lack of government support, and as a consequence has been overshadowed by neighbouring Kenya.

Legislation governing natural resources theoretically impose many restrictions on access to, and utilisation of, the resource especially in the forest reserves and the national parks but it is rarely enforced. The principal failing of most policies is that they do not consider the traditional interests of the local communities nor do they include them in the management of the resource although this attitude is now changing.

Training needs and priorities.

The country is far from self-sufficient in higher education and many students go abroad to study. There are shortages of graduates in many fields, and in particular there is a shortage of women entering into higher employment.

The need of qualified manpower to deal with the many issues listed above is high in Tanzania. Since most of the problems are interrelated and are of inter-disciplinary nature, the course attempts to bring up this concept quite well.

The course is very relevant to field officers, planners and to researchers. On an overall policy levels, providing better education opportunities in natural resource management and sustainable agriculture is clearly one of the priority needs of Tanzania. The course clearly fills a gap in the educational system.

Apart from the NORAD-supported 3 month short MNRSA course in natural resource management at Sokoine University of Agriculture, which is targeting field staff, the inter-disciplinary training in the management of natural resources has so far got no national alternative.

However, there are also areas in which the MNRSA course and Tanzanian needs may not fully coincide. The first one relates to the issue of building own competence and establishing own cross-cutting courses at higher levels.

The second factor, in which the MNRSA course may diverge from Tanzanian national priorities is that of locally defined research priorities. The failure to sustain strong linkages between the field work, local institutions and national research programmes limits the development impact of the course in the long run. Linking up to national research programmes is the most important mechanisms through which research results are transferred and thereby ultimately changing both the basis for sustainable utilization and management of natural resources and policy and planning. For the individual student a close linkage to a priority research programme would probably also provide easier career opportunities at later stages.

Contribution to institutional building and strengthening professional environment.

Evaluation of this was hampered by the fact that there is no good information about the students when they come back. As such it was not possible to know their current positions and their addresses which resulted in rather few filling in the questionnaire. Therefore the observations is based only on four institutions visited.

The institution visited were the Department of Wildlife, The Ministry of Agriculture, Forest Division and Sokoine University of Agriculture. In the Ministry of Agriculture no institution building was noted due to the fact that only two students attended the course, one of them just returned in June 1994. Although professional strength was gained by the participant who is located in the Ministry headquarters, so far it has not helped the institution because of poor manpower allocation. I believe however, the situation might be different for the one located in the Ikiriguru research station in Mwanza.

In Department of Wildlife we met four former students one of them from the first batch of students and the Director. In this department we noted very positive development in terms of institutional building and professional strengthening. Most of the former students are located in key positions where they contribute in decision making and hence influence policy and implementation of projects. For example Mr. Maige is preparing a management plan of the Serengeti National park, Mr. Severre is the head of the Conservation Division and is also participating in a task force reviewing the possibility of integrating the wildlife institutions in the country. Mr. Severre and Mr. Mafunda (of COSTECH) were also utilized as supervisors of students while in the field in Tanzania.

In SUA all the participants are utilised effectively and they contribute much of their knowledge through their teaching positions and by carrying out research. For example Mr. G.Rugalema who works in the Institute of Continuing Education is involved in teaching the 3 months short MNRSA course in ICE, is the coordinator of SADC course in Land Husbandry and was used as a resource person in a course run in Zomba, Malawi which was on the Integrating Conservation into the farming systems and also in a course conducted in Australia which was on Economics Research and Environmental management. Similarly Mr. Kessy and Dr. Kajembe are very active in conducting short courses. Therefore the students who are at SUA act as very efficient catalysts in the extension of the philosophy of the course. Unlike the other students these had good contacts with NORAD and NORAGRIC. The contacts were cemented by the fact that they take part in the short course and that NORAD has many other activities in SUA. Similarly they have been able to write joint papers with their Norwegian supervisors and still maintain good contacts with them. This means that the course in a way has created linkages at individual level too. One of them informed that since 1992 he has been visited at his home by 20 Norwegians. In this way it can be assumed that the contacts will contribute to the sustainability of the concept. What was strange however if the fact that although these were very active in academics and good people, they failed to get scholarship for their Ph.D training in Norway. The reason given was that they are not under NORAD supported projects. The three now have

got admission to the Wageningen University in the Netherlands for their Ph.D. training.

Therefore students from Tanzania, although they might be very well trained after attending the course, might end up being frustrated as they are not used effectively unless they are located in an appropriate institution or in positions where they can use their knowledge. Therefore besides training people the issue of manpower allocation should be looked into carefully. Due to this reason we found out that those students who were from research or academic institutions and in wildlife Department used their gained knowledge all the time. This group of former students all praised the programme and rated it as very useful. They were very motivated although the extra qualification obtained by attending this course did not bring about an increase in their salary. But others such as one from Forest Division and Ministry of Agriculture were not utilized effectively. They had no working tools and were not given proper jobs. For example the one in the Forest Division is transferred to a project in Arusha which is currently not operating since there are no funds. The one from the Ministry of Agriculture is supposed to take part in curriculum development but currently no curriculum development is taking place. Overall creativity in government departments is more difficult than in the academic institutions.

Linkages to NORAD projects.

One way of motivating former students could be to utilize these in NORAD projects as consultants or field officers. This could also enhance interaction and follow up.

There are several NORAD supported projects which relate closely to management of natural resources and sustainable agriculture. One example is a soil conservation and afforestation programme in Shinyanga, *TAN 0070 Shinyanga Afforestation Project*, which has been operating since 1990. Assistance is also provided for improvement of forestry management with emphasis on protection, conservation of endangered species and sustainable utilisation of resources; *Tan -0057 Catchment Forestry*. A sector support programme is in the initial stages to provide assistance for improved planning and management of natural resources. It is expected to come into operation during 1994.

Environmental components are also strongly present in other bilateral programmes. In the *Integrated Rural Development Programmes in Kigoma and Rukwa regions* (KIDEP and RUDEP). These programmes now support the regional and district administrations, agricultural sector, forestry, road rehabilitation, health, water supply and education. It should be noted that these programmes by intention seek to apply interdisciplinary and multisectoral approaches for addressing the problems of the regions.

The current nature and composition of the Norwegian country programme in Tanzania appears, thus, well designed for the establishment of linkages between former students and the NORAD office in Dar es Salaam. However today such contacts are not institutionalized in the sense that there is a regular communication with any of the NORAD officers regarding issues such as utilizing the graduate's competence for consultancies or studies, keeping in contact, dissemination of research results etc.

On a few occasions only have some of the former students been approached on a professional basis by NORAD. There are also few informal linkages between NORAD staff in Dar es Salaam and former students. In this context it should be mentioned that the NORAD office actually has been delegated few responsibilities for student recruitment or contacts. In reality, the roles and responsibilities of the NORAD office is limited to nearly a "mailbox" function, where the staff in charge merely see to it that application forms and other course-related documentation are sent to relevant institutions according to a mailing list of unclear origin. To a certain degree NORAD staff is involved with students before they leave Norway; to check that all intake criteria are fulfilled and that logistics are in order before travel.

NORAD has not been involved in following up students during their field work, and completed M.Sc. theses are not available at the NORAD office. Closer contact with the MNRSA students has depended upon the personal interest of some committed staff members, who have gone to considerable efforts to accommodate student's needs and keeping good relations. - However, an uncritical promotion of a too close dependency of a donor organization may also have its negative sides; - it is important to avoid creating a NORAD enclave of former students, as this may weaken their motivation for returning to their original assignments in indigenous organizations.

General recommendations.

The course should be advertised in newspapers indicating the qualifications and the background of the course. This will enable others from NGOs or Private enterprises also to participate.

More NORAD officials should also participate in the course since we find it very relevant and could benefit the NORAD Programme Officers.

Use of participants in NORAD projects could enable them to use and improve their knowledge. This will not only be a way to monitor the quality of the course but it will also enable fresh programme officers to interact with Tanzanians who have already been in Norway.

A way should be found which will allow the students to meet with each other after their return to Tanzania so that they can learn from each other's experience. This time can also be used to get feedback to the programme for further improvement. This could be a function of the NORAD office in the country. The mode could be in a form of a seminar where each one presents what they have been doing and how they have been coping with the problems in the field.

The issue of the M.Sc. field work was the weakest in the programme because the students selected their own supervisors, the supervisors and their institutions were not always paid for their work although they signed a contract with NORAGRIC, most local supervisors were not exposed to the course, the supervisors did not participate in examining the thesis and in some instances students were not supervised at all in the field. Therefore we recommend that a list of qualified supervisors should be kept in AUN, Norway. This list will need to be updated every three years. The supervisor from Norway and Tanzania together with the student should select the research topic. Preferably students should collect data on already identified areas of research for the continuity of information collected which can later be used for the management of the resource. Payment modality for supervision fees should be improved.

Draft by Adelaida K. Semesi, with inputs from the review team
18/9/94

Annex 7.

Country Report - Ethiopia.

Introduction.

Ethiopia is facing serious environmental and social problems due to soil erosion and stagnant food production on large land areas. The land degradation problems are most evident in the northern provinces. Some estimates indicate that the loss of fertile top-soil due to soil erosion may amount to 20-40 tons per hectare over large parts of the highlands, and that the agricultural lands of 10 million farmers may become unsuitable for production in the coming two decades due to land degradation.

The official Ethiopian strategy concerning natural resources "Natural Resources Development and Environmental Protection Strategy" (Ministry of Natural Resources Development and Environmental Protection, MNRDEP, October 1993) states that this situation is a result of a complex mix of economic pressure, politics and the deteriorating relationship between expanding population and the natural life-support systems on which it depends. The end result, the plan states, could be large-scale "desertification" and loss of the country's reservoir of biodiversity.

There are heavy pressures on the remaining forested areas in the country. They are caused by overgrazing and the expansion of agricultural cropland into forest areas, an increased need for construction materials due to the forced settlement of farmers into villages during the Mengistu regime, as well as resettlement schemes and the establishment of large tea and coffee plantations in the western provinces.

The Ethiopian Forestry Action Plan (EFAP) states that Ethiopia's forest resources disappears rapidly. Whereas in the early 1950's natural forest still covered around 16 percent of the land area, in 1989 the coverage was estimated at only 2.7 percent. The deforestation has led to a harsher micro-climate in many areas.

It is estimated that 85% of the Ethiopian population lives in rural areas, and agriculture is by far the most important economic sector in the country. This is reflected in the "Agricultural Development Led Industrialization" (ADLI), a main development strategy for the country.

Policies and manpower needs.

A number of new policies and institutional reforms to promote more sustainable utilization and management of natural resources are now being considered or implemented. One example is that an Environmental Impact Assessment (EIA) has to be carried out prior to the approval of any development project of activity. EIA procedures and guidelines are now considered essential in all sectoral planning processes. It is, at present, an important challenge to build up national capacity in this field, and to formulate and develop EIA procedure and guidelines that are commensurate with Ethiopian conditions. However, it is realised that the number of Ethiopian staff with environmental training and or experience is limited. For those who have such experience their services have been in considerable demand on various projects.

There are two important national programmes concerning natural resources and sustainable agriculture:

1. Food Production, Food Security & Nutrition (FBFSN)
2. Resources-Population-Sustainability Balance (RPSB)

The first programme (FBFSN) is coordinated by the Ministry of Agriculture. The primary goals relate to self-reliance in food production, reversing the negative ecological trends and building up and strengthening the comparative advantages of the Ethiopian agriculture.

The second programme (RPSB) under MNRDEP has a dual strategy of i) contributing to sustainable management of natural resources through introduction of improved agricultural methods and technology. The goal is improved food security and income in resource poor households in rural areas; and ii) utilization of natural resources for

balanced development of water resources, mineral resources, energy, management and protection of cultural heritages and wildlife and agro-based industry.

Both strategies include components of human resources development and environmental education and training. There is no forecast of future manpower needs within environment and natural resources management, but a substantial increase in demand is to be expected if the National Conservation Strategy (NCS) and the Natural Resources Development and Environmental Protection Strategy are to be executed. The implementation of these plans has been decentralized and the responsibilities for follow up will therefore be under the auspices of the 14 regions. The regions, however, lack both qualified personnel and adequate infrastructure to take over these responsibilities.

There is also a need to strengthen the Extension Service, which plays an important role as the contact point between government and the farming communities, as extensionists within agriculture and as a linkage between research and practice. Its personnel should be able to communicate with people at grassroots level; to understand socio-cultural factors, gender issues and people's opportunity structures regarding utilization of natural resources. The key role of the extension service in the implementation of both the NCS, the Forestry Action Plan and NRDEPS will demand a strengthening of both the capacity and the quality of these structures.

Educational institutions with relevance for environment and natural resources are Alemaya University of Agriculture, Arid Zone Agricultural College, Mekele, Awasa Agricultural College, Ambo Agricultural College, Jimma Agricultural College, Wondo Genet Forestry College, Merto Le Mariam Training Centre, Arba Minch Institute of Water Resources. Courses aiming at interdisciplinary approaches to natural resources management are apparently absent.

Some observations.

The development strategy ADLI "Agricultural Development -Led Industrialization" places agriculture and natural resources at the basis of Ethiopia's development activities. The emphasis the Ethiopian Government presently puts on a sustainable natural resource utilization is apparent in the number of policy documents, plans and strategies, institutional bodies and concrete projects and activities which have recently been developed. The need for an interdisciplinary approach and a holistic perspective to in order to tackle the future challenges for a sustainable development run like a red thread throughout all these documents. However, the concept seems far from having penetrated to the relevant sector approaches. Neither do all relevant personnel seem to have captured the central meaning of these concepts or are able to apply them in their present work situation.

Another constraint is the limited implementation capacity of the government organizations. Such limitations may not have been fully taken into account when the bold plans and strategies for the future were worked out. The implementation also depends on the cooperation with a large number of farmers, many of whom are quite suspicious to government structures after two decades when many arbitrary decisions were made, making life more difficult for many farmers and rural people. A low profile, proper attitudes and a long-term commitment are, therefore, needed to overcome some of this distrust.

In view of the economic problems facing Ethiopia in general and the conditions set in the restructuring programme in particular, the issue of the need for M.Sc. level education in the field was discussed at several meetings. It was argued that in the present situation a two-year course with a few students being granted a fellowship in Norway may be somewhat too costly. Another important aspect mentioned was the pressing need for institution-building in Ethiopia, which could offer opportunities to more people. Also the need for establishing short courses of one to three months duration to upgrade the skills of those already employed both at national decision-making levels and at regional levels was highly stressed. The review team agrees with these observations.

There is a critical need for further inputs and strengthening of inter-disciplinary training to tackle environmental problems. Offering a few scholarships in Norway will probably be far from meeting the demands. Other donor-supported scholarship programmes offered to the country are, to the team's knowledge, based on sectoral training rather than an inter-disciplinary approach. However, many of these programmes seem to address the institutional links and institution-building needs in Ethiopia more directly than the MNRSA programme.

Relevance to the Norwegian development assistance in Ethiopia.

Norwegian support to Ethiopia related to natural resource management and sustainable agriculture has so far mainly been financed by the SSE-development programme (Sudan-Sahel-Ethiopia) and channelled through NGOs, such as:

- Save the Children: Rural District Development programmes in Bolosso, Wolayita and Tergulet/Wogda in Northern Shoa;
- the Development Fund /FIVH ("*Fremtiden i våre hender*") in Tigray; and
- Norwegian Church Aid: District Development programmes in Bale Region, Tigray, Illubabor, Gondar.

The SSE research programme has resulted in the establishment of five agreements between Norwegian and Ethiopian research institutions. All but one of these agreements are with the University of Addis Abeba. The Agricultural University of Norway has entered into an agreement with Awassa College of Agriculture. The agreement concerns agricultural research on arid areas and nutrition. The Christian Michelsen's Institute in Bergen has engaged itself in collaboration with the Social Science Department at the University of Addis Abeba in social anthropological training and research with an emphasis on natural resource management in pastoral areas. The University of Oslo works with the Ethiopian Wildlife Department on integrated wildlife management, and the University of Trondheim has a project in collaboration with Institute for Development Studies on geography and social science related to agriculture.

The newly established, but not yet officially approved, "*National Environmental Protection Authority*" has forwarded two environmental-focused requests for support to the Norwegian Embassy :

- "*Development of a First Phase Environmental Education and Training Project in Ethiopia*"
- "*Sectoral Environmental Impact Assessment Guidelines*".

As far as NORAD is concerned, these two project proposals seem to have been positively assessed, although no final decisions as to future support are made. However, in the view of the MNRSA course, the linkage between these projects and the graduates may have a great potential for maximising the effects of Norwegian support to natural resources management in Ethiopia. Ways and means to strengthen these links should be further explored and the competence of the former graduates could in this respect be further tapped to benefit also possible NORAD supported projects within the sector.

The trainees.

The review team interviewed eight MNRSA graduates in Ethiopia and one in Norway, and thirteen questionnaires were filled in. The work motivation of the graduates seemed to be high, as also seen in Figure 8. This was also confirmed by their employers.

Five of a total of 24 students (21%) from Ethiopia have been women. Their situation vary somewhat from the Tanzanian in that fewer have been married with children. However, their experiences appear to be similar. The social pressure had they studied in Ethiopia would probably have distracted them from taking higher education. The female candidates however, felt that their greatest problem was to get access to the application form and relevant information regarding the course.

Four graduates are now working for NGOs, and all of them are women.

The graduates were invited to a lunch in Addis Ababa, and eight of them participated. There was a lively discussion, and the graduates were strongly motivated for forming a network or an association of Ethiopian MNRSA graduates. After the interviews were finalized they initiated a meeting and elected a committee for this purpose.

Country Report - Sri Lanka.

The Natural Resources Base.

Sri Lanka is characterized by the two major ecological zones - wet and dry and also the intermediate zones that lie in between the two. The dry zone occupies about 2/3 of the land while the wet zone occupies about one third. The country can further be subdivided to several agro-ecological zones, considering the diversity in soil types, rain fall, and elevation. The country is hence extremely rich in diversity of eco-types and the associated flora and fauna. The wet zone has tropical moist-forests which gradual change in composition from the south west lowlands to the central mountains. The dry zone is characterized by monsoon forests, but in the dry areas, tropical scrub forests exist.

The country has an arable land area of 2,037,000 ha of which 439,000 ha. are permanent pasture; 1,226,000 ha. of indigenous forests; 727,900 ha of plantations, and 739,771 ha of protected areas. Annually about 5,000 ha of land is cleared for cultivation (Quoted by Ministry of Environment and Parliamentary Affairs, 1994).

The forest cover is 20 % of the total land mass. In 1956 the forest cover stood at 2.9 million ha. or 44 %. This represents one of the highest deforestation rates of the world, an average of 4% per annum. This has mostly been confined to the dry zone, which has been developed for irrigated agriculture based human settlements.

The country has an extensive system of parks for recreation and protected areas. It has three strict natural reserves, 10 national parks, 2 nature reserves and 46 sanctuaries. Together these comprises 14 % of the land mass of the country. Yet there is heavy encroachment in these areas. Most protected areas are in the dry zone while the wet zone is most rich in bio-diversity.

Sri Lanka's bio-diversity is of global significance. It has a high rate of bio-diversity per unit area of land. Its wild life includes 628 known species of terrestrial vertebrates, 84 species of mammals, 379 birds, 32 amphibians, 133 reptiles, and at least 59 species of fresh water fish. Most of the endemic species are found in the wet zone forests. About 30% of the angiosperm flora and 18 percent of the ferns are endemic to the country.

The countries coastal and marine resources are highly productive, and a large number of the population resides in the coastal areas. In 1976 an exclusive zone was declared with an extent of 525,000 KM² approximately eight times the land area in the marine area. Several hundred miles of coral reefs surround the island, along with 123,000 ha of brackish water lagoons, while 137,600 ha of fresh water tanks and reservoirs are available for inshore fisheries.

The long drawn civil disturbances since 1983 in the North and East and the sporadic violence in the rest of the country due to the youth insurgency, the last bout which was in 1988/89, have affected natural resources and their management in many ways. Inability to collect essential data, restrictions to manage resources, loss of valuable trained personnel, lack of enforcement and direct destructions and pollution are a few of the effects.

Environmental Issues.

The natural resource base management is done by various governmental, statutory, NGO and community based organizations. Several statutory bodies are established by the state to undertake environmental and natural resource management issues.

<u>Sector</u>	<u>Number of Statutory Bodies</u>
Land use	44
Forests Wild Life and fisheries	11
Water resources	16
Environmental Research	10
Environmental Impact Assessment	1
Urban/Industrial Development	30

The training and educational system has incorporated environmental issues into the primary, secondary and tertiary education system. There is a wide awareness of environmental issues among the public. The media constantly highlights these in the different languages. Historically, due to the Asiatic religions, the public has had a close awareness and veneration of nature and the natural resource base of the country.

Several major issues are of national importance in the sphere of environment and natural resource management. First, is the rapid deforestation which has been estimated at 4% over the last four decades. This rapid deforestation has direct impact on its rich bio-diversity. The agrarian economy has attempted to bring more land under cultivation to provide opportunities for the large number of rural folk and the expanding urban lower classes. The expansion of cultivable land has taken more land out of forests in the dry zone. The increasing needs for fuel wood and timber, both in the urban populations and rural folk put great stress on the reserved forests areas. Haphazard expansion of the city and road network is adding great stress on the ecosystem the coastal resources are under threat from polluted waterways and over visitation by tourists. The coral reefs are badly damaged in several parts of the country. The export oriented policy with few restrictions and ineffective monitoring have placed many plants and animal species under severe threat of extinction due to over harvesting and sale.

The institutional and human resources required to meet the challenges of sustainable and rational management, while meeting the needs and aspirations of the youthful and growing population is a great need. The inadequacies of the existing social, economic and legal institutions have to be examined closely, restructured if necessary, new institutions developed, old ones strengthened in an appropriate manner. These will require skilled manpower which will be required for the government, NGO sectors as well as the community based organizations.

NORAD Involvement in Sri Lanka.

The multitude of challenges and needs of the nation are being addressed by the government with different levels of successes with the assistance of various donor organizations. Among the major donor agencies, NORAD plays an important role in Sri Lanka. NORAD assistance comes to the country in three routs. First the direct country programs, the global programs and other programmed not accounted in the previous two. Main areas of cooperation are:

- (1) Rural development including two IRDP projects and training research and institutional building;
- (2) Plantation sector, social welfare program, and vocational training programs;
- (3) Environmental support programs; and
- (4) Reconstruction and rehabilitation in the Batticaloa district and vocational training.

Other areas of cooperation are for National Drug Quality Assurance Lab, supporting the Women's Bureau and Consultancy fund. Of these three the first two are being phased out towards termination. Environmental education, planning, research, and human resource development are receiving special sponsorship by NORAD.

NORAD supported environmental and HRD Activities.

The two major projects the NORAD has bene involved in are the IRDP projects in two very underdeveloped districts, namely Moneragala and Hambantota. The projects have taken a holistic approach, participatory and incorporating environmental and resource management issues as an integral apart of the project activities.

Among the new proposals entertained by NORAD are six for institutional building and training in environment management, eight projects in Environment Protection and Management, eighteen in Environmental Education and Awareness creation, of fourteen in Environment Research and Planning, and one project ion Nature Protection work. A total of Rs. 42.9 million have been estimated for these projects.

In the IRDP projects environmental and natural resource management activities and HRD are vital components. Among the projects mentioned in the previous section, are those for developing skills at the grass roots level with village organizations, and skills development and the middle management levels and well as in improving research skills.

The Trainees.

Eight Sri Lankans from different government sector organizations have participated in the M.Sc./Diploma program being reviewed.

Distribution of Sri Lankan participants by organization and sex: Male Female

	Male	Female
1. Department of Agriculture	1	1
2. Universities	2	1
3. Ministry of Lands	0	1
4. Mahaweli Development Authority	1	0
5. Agrarian Services Department	1	0
Total	5	3

Issues concerning Appropriateness of the Training Programme and Post-training Trainee Adaptation.

The following issues are identified as relevant to the Sri Lanka situation:

1. The participants have a major concern of adapting to the work after returning. The work environment is often not conducive for best productivity for the trainee. Developing communicative and personal projection skills while in Norway through formal courses or social activities will improve the impact of the returned trainees.
2. The selection procedures of trainees could be vastly improved. If they knew more details and content of the programme. Some participants will not be able to use the skills due to a mismatch between the program objectives and the work they do at their jobs.
3. The trainees could benefit from a formal or an informal networking of the alumni of the NORAD scholars in Sri Lanka. Such an association could be formed by NORAD intervention. The new participants will benefit by knowing and being able to contact previous participants. They could also form into a mutually support group to

cope with challenges after returning.

4. An update of knowledge of participants may be necessary through either local workshops sponsored by NORAD or by re-training on short programs in Norway.
5. Infrastructure and activities pertaining to environment and natural resource management are rapidly developing in Sri Lanka. Namely, the Open University, the University of Peradeniya, University of Colombo, University of Moratuwa are at present offering several programs at the graduate and undergraduate levels in Environment skills. The Postgraduate Institute of Agriculture is also offering a M.Sc program in Environmental Economics and Natural Resources Management, an institutional link with Agricultural University of Norway and the program in specific will be most beneficial in the long run.
6. Meeting adjustment needs to the work place for returning graduates is a challenge that needs to be addressed. The highly stratified bureaucracy in the public sector both among administration and professional staff stifles initiatives and the development of young trainees. This aspect needs to be examined closely in a scientific manner to be addressed to make the program sustainable in the long run.
7. An excursion of the IRDP and other project areas by the selected trainees before their departure for the postgraduate training program in Norway would be most beneficial to identify research problems of practical benefit to NORAD project areas or its target groups.
8. It would be most appropriate in the long run to identify institutions and organizations that could have the maximum multiplier effect for selection of trainees. In selecting trainees, their work role after returning must be closely examined. Often, postgraduate training is a requirement in the public sector for purposes of ensuring promotions, and is of little or no use for actual work since new responsibilities are not assigned after trainees return. NORAD project officers, and training and educational institutions which have on it agenda - environment and natural resource management, must be the targets of HRD by NORAD on this program.

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