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"TRAINING WOMEN AT THE INSTITUTE OF RENEWABLE NATURAL RESOURCES: RECOMMENDATIONS ON RECRUITING, EMPLOYMENT AND FINANCIAL SUPPORT"

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INTRODUCTION

Nepal is one of the few countries in the developing world where women are being professionally trained in forestry and renewable natural resource management. In the fall of 1983, seven young women were admitted to the Institute of Forestry/Institute of Renewable Natural Resources(IOF/IRNR) which is Nepal's official post-secondary school for the study of forestry, soil and water conservation, and wildlife management. Their admittance at the Institute was a significant event in Nepal which introduced the first women into a formerly male-dominated profession and marked a commitment on the part of the Nepalese government to involve more women in forestry related activities.

I spent the summer and fall of 1984 in Nepal on a fellowship sponsored by the South-East Consortium for International Development with funding from the Women in Development Office of the United States Agency for International Development(USAID). I worked there in the capacity of technical assistant to the Resource Conservation and Utilization Project(RCUP) which is a cooperative project between the Government of Nepal(GON) and USAID/Nepal designed to improve soil, water and forest resources in the two major watershed catchment areas of the central hills of Nepal--the Daraundi River in Gorkha District, and the Upper Kali Gandaki River in Myagdi and Mustang Districts. Project activities focus on an integrated approach to renewable natural resource management and include introduction of improved fuel-efficient wood stoves, livestock management, creation of community-managed forests, introduction of improved agricultural and forestry skills and technologies, training and extension, and institutional development at the Institute of Forestry/

Institute of Renewable Natural Resources. (The IOF/IRNR is commonly refered to as simply the IRNR as a result of a name change which was proposed in 1984. This report will make use of the more simplified version of the Institute's name and refer to it as IRNR.)

The major objective of my work was to investigate certain problems concerning the women students studying at the IRNR. Those problems included the integration of women at the Institute, the question of suitable employment for the women once they graduated, recruiting female students and continued financial support for women studying at IRNR. All of these problems are discussed in subsequent sections of this report.

The methodology I employed in my investigation was quite simple. With an invitation from the RCUP, I moved to Hetauda, Nepal where the school is located, and became an invited participant in IRNR activities. At the Institute, I worked very closely with the Program-in-Charge (a position similar to that of assistant Dean), Madhav Karki, who was very helpful in all my endeavors to understand the situation at IRNR and further the women's interests. Shanta Pandey, the RCUP social scientist, introduced me to the female students, establishing me as their spokesman, resource person, friend and greatest supporter.

I also spent time in RCUP's project districts observing first hand the project's activities and visiting three female students from RCUP in their homes. Throughout my stay, I benefitted from the support of the Nepali and expatriot staff of the RCUP and IRNR in Hetauda and Kathmandu.

This report is based on information gathered in interviews, through surveys, and literature written by former RCUP personnel (notably Marilyn Hoskins, Debra Davidson, Carol Cooper, and Donald Messerschmidt). It is also based on my own observations and close participation in IRNR and RCUP activities. The report is divided into sections, the first giving a

brief history of the introduction and involvement of women at the IRNR, with subsequent sections dealing with the problem issues of recruitment, employment and financial support for women at the IRNR.

SECTION I

THE HISTORY OF WOMEN AT IRNR

Training for foresters and other renewable natural resource personnel is one important component of Nepal's community forestry program. Begun in the 1970's, community forestry in Nepal is a nationwide program designed to involve rural people in efforts to preserve and develop Nepal's forest resources. Because community forestry involves a people-oriented approach to natural resource management, Nepal recognized the need to train a new sort of forester who would be sensitive to village people's needs and possess the knowledge of integrated approaches to solve the deforestation, soil erosion and agricultural problems especially evident in the heavily populated hill regions of Nepal.

Nepal's growing need for more foresters, soil and water conservation personnel and other environmental managers is now being met by training at the Institute of Renewable Natural Resources (IRNR). With funding from the US Agency for International Development(USAID), the RCUP is supporting a project to help build the institutional capabilities of the school. The project's principal objective is to provide the Government of Nepal(GON) with middle-level personnel to implement planned development activities in the forestry sector. Part of the project's special emphasis is on enrolling and training more females and students from remote areas of Nepal.

The need to target women for renewable natural resource development

The idea for training women in renewable natural resource management

originated with the realization that women play an important role in forestry-related activities in Nepal. It is the responsibility of rural women to collect firewood for cooking and green fodder to feed livestock (Davidson and Cooper, 1983). Because women cut the forest and feel most directly the problems of scarcity they also have the greatest stake in saving the forest or developing new forest land for future use. Thus, there are two good reasons for focusing renewable natural resource development efforts at women: first, to ease the burden of work for the women themselves; and second, to target programs involving forestry development at the persons most involved in forest use and destruction.

Why train women?

There is also a very specific need to train women in forestry and renewable natural resource management. Part of the community forestry methodology involves teaching rural Nepalese about natural resource problems and then supporting them in efforts to improve and develop local forest, soil and water resources. Social norms governing conduct make communication between the sexes difficult in rural Nepal; thus, women extension workers are needed to forge the communication link with rural women. In the past, even if women were seen as the logical group to involve in forestry development and protection programs, they were ignored because outreach was conducted by men for men (Davidson and Cooper, 1983). Training women with the intention of using them to reach rural women is the most viable method to reverse this trend.

Women at the Institue of Renewable Natural Resources

In response to the need to train women in forestry, the RCU Project developed a program to sponsor women at the IRNR. The RCUP also actively

recruited women from villages in RCUP's hill districts as candidates for training and helped negotiate their admittance at the Institute. The young women had passed their School Leaving Certificate(SLC) exams and thus were eligible for entry into a university level school. After one year of delays over the negotiations for their admission, these women and three others were admitted to the Institute in the fall of 1983. Six of the women began studies at the Proficiency Certificate level which provides training in preparation for positions as junior technicians and forest rangers. One woman began studies at the Diploma(Bachelor of Science) level which is the more advanced degree offered by IRNR as training for government posts as District Officers and other mid-level positions.

Integrating Women into the IRNR

When the first female students arrived at IRNR, they faced a number of immediate difficulties which stemmed from the fact that women had never before been enrolled at the Institute. Although their financial support had been assured by the RCUP, the Institute had failed to provide housing or a house warden for the women. There were also some difficulties in completing the admission process for the women since special arrangements had been made for their entry. Both of these difficulties were eventually worked out by the IRNR and RCUP staff. A hostel was found for the women off-campus and after the first difficult weeks the women settled down to a life dictated by study and classes. Throughout the year, the women participated in the normal functions of the school such as making field trips and doing the compulsory physical training and games.

By the time I arrived, at the beginning of their second year, the

women expressed to me their own sense of belonging to the Institute. The Institute had made small adjustments to accomodate them such as planning hostel facilities for women on the new campus under construction in Pokhara, providing separate tents or sleeping quarters for the women during field trips, and establishing security measures all meeting Nepali standards for the appropriate treatment of women. The women seemed at ease in their situation, commucated freely with their male colleagues, and appeared to be an accepted part of campus life. The second group of female students which entered in the fall of 1984 met a far more accepting and encouraging atmosphere on campus and avoided the difficulties the first group met with upon arrival.

But the problem of integrating women into forestry and other renewable natural resource activities is not merely a simple matter of accepting female students at the IRNR. There are also the larger problems of integrating women into the broad scheme of forestry activities in Nepal and the implication that increased female involvement will have upon that sector. Big questions still remain about how female IRNR graduates will be employed, who will continue to support training for women and how more women can be recruited for that training. A discussion of these unresolved issues and some recommendations for possible solutions follow in the next two sections.

SECTION II

ATTRACTING WOMEN AND REMOTE AREA STUDENTS TO THE IRNR

One of the goals of the IRNR is to increase the enrollment of females and students from remote areas. The greatest needs for personnel in the forestry sector are to fill posts in remote areas of Nepal. Students recruited from cities and the Terai districts are reluctant to take posts in outlying areas in the middle-hills or mountains districts. However, students recruited from remote areas are far more inclined to return to those areas to work, especially if they are near their homes (USAID, 1984).

The IRNR faces a number of difficulties in meeting its mandate of increasing the number of females and remote area students enrolled at the Institute. There are three great obstacles which make it very difficult for students from hill and remote areas to both apply and be accepted at the IRNR. These are: (1) lack of knowledge among students in remote areas that there are educational opportunities available at IRNR; (2) the difficulties of applying for admission; and (3) generally poor academic standing due to the lack of schools in remote areas.

This section is an analysis of these problems and a list of recommendations useful to IRNR to increase the number of female and remote area students.

Past Efforts to Recruit Women to IRNR

Recruitment by RCUP for women to attend IRNR was based on the discovery that there was an interest among a few women in RCUP's districts to attend IRNR. The four women RCUP eventually recruited lived

in villages where RCUP was active and were thus known to the project personnel. The women had all passed their SLC exams, an unusual accomplishment for village women in a country where 95 percent of the female population is illiterate (Acharya, 1979). In addition to these four women, two women from Hetauda and another from Bakhtapur in the Kathmandu valley began studies for the 1983-1984 academic year.

There are two major reasons why the first enrollment of females at IRNR was so low. These are: (1) it is difficult to find women from hill regions of Nepal who have passed their SLC exams and are thus eligible for entry; and (2) few women outside of RCUP's districts knew about the opportunity for study at IRNR.

Women entering for the 1984-1985 academic year were recruited in a different manner. Part of the first-year Certificate students' work-study assignment involved recruiting female high school students from the Hetauda area where the Institute is located. The IRNR female students visited high schools in Hetauda where they gave information to eligible women on educational opportunities at IRNR.

Partly as a result of these recruitment efforts and partly due to other reasons which will be explained later, IRNR received a large number of applications from women in Terai regions, especially from the Hetauda bazaar area. The Institute received 51 total applications from females which was a significant improvement over the year before. Out of the 11 females admitted to the Certificate program, five came from Hetauda, four from other Terai regions, one from Gorkha in the middle hills region of Nepal, and one from Kathmandu. One women from the Terai was also admitted to the B.Sc. (diploma) program.

IRNR Application and Selection Process

Although the significant increase in the number of applications submitted to the IRNR from females was a great success for the program, there was one troubling feature associated with the increase. Many of the 51 applications received at the Institute were from females whose homes are on the Terai. Admission at IRNR is determined by ranking of SLC scores. The 11 women admitted at the Institute were almost all from the Terai because they outranked women from remote or hill areas. The results of last year's admission process indicate a general trend favoring admission of women from Terai or urban areas which is in opposition to the program's objective to enroll more female students from remote or hill areas.

The trend in evidence at IRNR affects all remote area students, both male and female. It is necessary to closely analyze this trend because of the difficulties it presents to IRNR's ability to meet its goal of increasing the enrollment of students from remote areas.

The application procedure for admission to IRNR is a major obstacle to increasing the number of remote area students at IRNR. According to Tribhuvan University(TU) rules, a student wishing to apply to any of its schools must make a direct application either in the Kathmandu office or in the Dean's office of the school itself. For a remote area student, this means that they must walk from their home to a place where they can get public transportation to either Kathmandu or Hetauda. Because there are no public systems of communication outside the Kathmandu valley, once students have applied to IRNR they must then wait in Hetauda to hear the results of the selection process. This wait could be up to two weeks. This system for applying involves both the expenses of travel in terms of

finances needed for the journey and time spent away from work. It is especially prejudiced against women who have less freedon to travel about the country alone or accompanied. In the past, most of the applications IRNR has received from remote area students were from those few who had been expressly helped through the application procedure in some way.

Some of the difficulty in applying to IRNR will be eased when the campus moves to the new facilities being built in Pokhara. Pokhara is located in the middle hills region of central Nepal and as such will be much more assessible to students from hill regions. However, considering the geograpny of Nepal, a student from far-eastern or far-western regions still must travel a great distance in order to apply. For them, the situation does not improve with the move to Pokhara.

Lack of Schools in Remote Areas

Outside of the Terai region, Nepal is seriously lacking in secondary schools. In remote areas, this means that students have less opportunity for formal study and preparation for post-secondary education. In the selection process, students are ranked according to their SLC scores with preference given to those students who have performed well in Math, Science and English. Without a high school to attend, remote area students must study for the SLC examinations on their own. This presents many difficulties for most students and subsequently, remote area students generally score far lower on tests than their peer from the Terai or the Kathmandu valley.

The situation is even more difficult for female students. In rural Nepalese society, women are generally not encouraged to continue studies beyond the first few grades of school. The labor of daughters is important to the economy of the household and girls generally stay at

home to work while sons are sent to school (Davidson and Cooper,1983). The evidence of this tradition is a female literacy rate of approximately 5 percent. Thus, in general, girls perform less well than boys on SLC examinations due to a lack of educational opportunity. In the selection process at IRNR they would have less chance of being accepted on academic merit and therefore it is necessary to reserve seats for them.

Knowledge of Educational Opportunities at IRNR

One other factor which hinders the recruitment of females and remote area students is a lack of knowledge about educational opportunities at IRNR. While the Institute is well-known to people who live on the Terai because it is situated near their homes, it is less well-known to people in the hills. Information passes slowly into the hill regions due to geographical barriers and the difficulties of communication and transport. Thus IRNR receives fewer applications from students who live in hill regions simply because they are unaware that IRNR is an educational opportunity open to them.

Parallel Problems at the Institute of Agriculture and Animal Science

The Institute of Agriculture and Animal Science(IAAS) has a similar program and goal of training female and remote area students. Both the IRNR and the IAAS are technical institutes belonging to the Tribhuvan University(TU) system and thus both fall under the same set of rules regarding the application procedure. The IAAS is located in Rampur, also in the flat Terai region of southern Nepal and equally far removed from students in remote regions. Because of the similarities in procedures and location of the two institutes, remote area and female students wishing to attend IAAS experience the same problems as those wishing to

attend IRNR.

One of the obvious answers to the problems for both schools is to simplify the procedure for applying to technical schools of the TU system. The on-going reorganization of the TU system provides an opportune time to lobby the TU congress for changes applicable to technical institutes.

Observations from the Field

During a field trip into two of RCUP's districts, Myagdi and Mustang, I observed a rather interesting phenomenon involving application to IRNR. In discussions with the female IRNR students whose homes I visited and with a few other students who had applied at some time to IRNR, I discovered how they had been helped in the admission procedure. None of them had actually made the trip to Hetauda and so I was interested to learn how they got the application forms and who took them or sent them to IRNR. In every case, the student had been aided by either someone attached to the RCU Project, or by a district officer [District Forest Officer(DFO), District Conservation Officer(DCO), District Education Officer(DEO)] or by some combination of both. These people were instrumental in distributing application forms and seeing that the forms were then sent to Hetauda. Without this help, many of the students could not have applied.

I also saw evidence of a growing interest among high school students, both male and female, in going to study at the IRNR. All along my route, I met with students who found out that I represented the IRNR and were interested in asking me questions and seeking advise. I had some interesting discussions with some of the students about why they wanted to attend IRNR. In most of their answers I recognized a deep

concern over the deforestation, the soil erosion, and the fuelwood and fodder scarcity that they saw in their communities. One male student also told me that he wanted to go to IRNR because he thought that forestry was a good prospect for a career.

The few female students with whom I talked had unexpectedly high SLC scores for females from remote areas. (The scores were all second division, SLC pass, ranging from 52 to 56 percent. Such scores represent medium levels of acheivement on SCL exams.) It seemed apparent from my brief visit to RCUP's districts that there may be more women in remote areas who have passed their SLC's than is currently assumed. It was also apparent that the relatively small amount of advertizing that RCUP was doing mostly by word-of-mouth was paying off in terms of increased interest among high school students about IRNR.

Recommendations

The following are recommendations which were developed with the collaboration of both the IRNR and RCUP staffs for changes in the admission procedure at IRNR. These recommendations are designed to help IRNR in its efforts to attract more remote area and female students. Because so many of the issues are similar, some of the recommendations presented here are based upon solutions already being implemented at the IAAS (IAAS, 1984). If IAAS solutions are also adopted by the IRNR, they could help to establish a set of standardized procedures which could be used by TU's technical institutes to facilate the application process for all students.

Recommendation: that IRNR and IAAS cooperate on lobbying efforts to change the standard application procedures in order to facilitate the entry of females and remote area students.

Recommendation: that the helping hands process which is evident in RCUP's districts be institutionalized to act as an interim measure to facilitate the application process for students wishing to apply from remote areas. The Dean of IRNR has the discretionary power to authorize district officials to provide application forms and help process them by sending them to IRNR before the deadlines. Among those available to carry out this procedure are:

(1) Peace Corps Volunteers (PCVs). The Program Director for the Peace Corps Math/Science teachers program has already volunteered the services of PCVs to distribute and help process applications. The Math/Science teachers are placed in the middle hills regions to teach classes in the upper grades and thus have excellent access to students who would be good candidates for IRNR.

(2) District Education Officers(DEOs). All questions of education are under the jurisdiction of DEOs in their districts and thus IRNR should seek their cooperation on this matter. Application forms could be made available through these offices and students could rely on the DEO to send their application to IRNR before the deadlines.

(3) District Forest and Conservation Officers (DFOs and DCOs). Considering the help that DFOs and DCOs have contributed in the past, their support should again be enlisted to identify and aid students who wish to apply to IRNR. It is especially important that DFOs and DCOs outside of RCUP's districts be notified of educational opportunities at IRNR as they are less likely to be informed and therefore helpful.

Recommendation: that IRNR fund radio time to announce the names of selected applicants in remote districts in order to notify them of their acceptance. This process will save remote area students the necessity of being present at the Institute when the acceptance list comes out.

Announcing the names of accepted students over the radio is especially important since it is hard to predict exactly when the list of accepted students would appear. The radio announcement should be timed well in advance so that students have suitable time to travel to campus to accept their seat.

Recommendation: that the Women's Development Service of the GON's Ministry of Panchayat and Local Development should increase their involvement of recruitment and support of women at both the IRNR and IAAS. Although the IAAS is already overburdened with the massive job of overseeing all of the GON women-oriented projects, support for involving more women in study at the IRNR and IAAS could be strengthen if backed by the WDS.

Recommendation: that cooperation on recruitment efforts be sought with women's organizations and other organizations in Nepal which reach village women. This has partly been accomplished by the RCUP's staff members (myself among them) participation in the Women in Development(WID) organization in Kathmandu. Participants in the WID's monthly meetings were informed of the recruitment and other problems for women at IRNR. I also made a presentation to the group in December of 1984 asking for their help in recruiting women for study at IRNR. Informing women involved or employed by GON ministries, large donor organizations and other organizations working in Nepal is an excellent way to spread information concerning women throughout the country.

Advertising

Advertising is necessary to inform students in hill regions of the educational opportunities that exist at IRNR. Distribution is the major

difficulty involved in advertising any information in hill regions. The most effective form of distribution involves the cooperation of people who work in those regions and have access to students. With this in mind, the following efforts were made to develop and implement an advertising campaign for IRNR:

(1) At the suggestion of the IRNR administration, I developed and wrote a comprehensive school prospectus detailing academic information about IRNR. This school bulletin is being printed and distributed throughout Nepal to various government agencies. However, the bulletin is written in Englisn and therefore has limited use as an adverizement to the majority of the Nepalese people.

(2) The RCU Project also published a small pamphlet which I wrote entitled, "Educational Opportunities for Women and Remote Area Students at the Institute of Renewable Natural Resources." The pamphlet is translated and printed in Nepali for distribution to schoolteachers, field technicians, and government officials who are posted in hill areas and have access to high school students. A program is being implemented to distribute these pamphlets through Peace Corps Volunteers who are high school Math/Science teachers working in the middle hills regions of Nepal.

(3) The RCU Project is also training three "Women Development Officers"(WDOs) to be posted in each of RCUP's three districts. As part of their duties WDOs will help to recruit women for training at IRNR from RCUP's districts, distribute information regarding the program, and generally act as a resource person and promoter for students wishing to attend IRNR.

The following are recommendations to further the advertising efforts started by the RCUP:

Recommendation: that the RCUP should explore the options for a more widespread distribution of the small pamphlet written in Nepali. Cooperation could be sought from other donor-agency funded renewable natural resource projects, from the Women's Development Service of GON, from the Ministry of Forests and Soil Conservation, the Ministry of Education and Tribhuvan University.

Recommendation: that the pamphlet be made available in all District Education Offices, District Forest Offices and District Conservation Offices. In this way, the pamphlet should be used not only to inform prospective students but also those people who are responsible for informing others about educational opportunities.

Recommendation: that the IRNR fund radio time on "Radio Nepal" for advertising announcements. Radio Nepal is widely listened to all over Nepal and often serves as an official medium of spreading information into hill and remote regions.

Researved Seats

As already outlined above, remote area students and females generally score lower on SLC examinations than students from more urbanized areas and the Terai. Female students generally score lower than their male counterparts. In order to offset these disadvantages and assure representation of both these groups of students, the IRNR has reserved seats policies for females and remote area students. However, the present system of reserved seats needs to be expanded to assure a more diverse representation of students from hill areas at IRNR.

Revisions also need to be make to the reserved seat policy for women. Last year, almost all of the females accepted into the Certificate

program were from the Terai area of Nepal. Few women from hill regions were accepted because they generally score far lower on SLC examinations than women from urban and Terai areas who have better access to education. It is necessary to not only reserve seats for women at IRNR but to expressly reserve seats for women from hill or remote areas.

The following are recommendations to revise the reserved seat policies concerning females and remote area students:

Recommendation: that the problem of reserved seats for women be clarified since there has been perpetual disagreement on the policy which reserves 10 percent of the seats in every new class (i.e., 110) per year for women. In 1984, IRNR admitted 11 women to the Certificate program which exactly met the 10 percent requirement. However, some of these women had SLC scores high enough for them to have been admitted on the basis of academic merit alone. Some argued that these women should have been admitted to the Institute without their being considered as part of the 10 percent requirement. If IRNR had followed this policy, more that 11 women would have been admitted to the Institute in 1984. In the future, IRNR will be accepting many more groups of students under a reserved seat policy and should clarify its position on this question to avoid further disputes. It has the option of including students who are accepted on the basis of academic merit as within the reserved seat requirements or considering them outside the requirements.

Recommendation: that the reserved seat policy for Certificate level students be revised to assure that in the future the Pokhara campus will have a diverse representation of students, both male and female, from hill areas. The following is a suggestion for a new reserved seat policy addressing this need:

(1) Females: 20 total reserved seats to include (a) 2 seats for women

from each of RCUP's districts, i.e. Myagdi, Mustang, and Gorkha, (b) 3 seats for women from the Far-western Development Region, (c) 3 seats for women from the Mid-western Development Region, (d) 3 seats for women from the Eastern Development Region and (e) 5 additional seats for women from any region of Nepal not making admission in open competition by academic merit.

(2) Males: 15 total reserved seats to include (a) 2 seats for men from each of RCUP's districts, (b) 3 seats for men from the Far-western Development Region, (c) 3 seats for men from the Mid-western Development Region, and 3 seats for men from the Eastern Development Region.

Financial Incentives and Continued Financial Support

Female students at the IRNR are presently financially supported by the RCUP as part of its institutional development project at IRNR. Women studying at the Certificate level receive 2000 Nepali rupees (NRs) per year, distributed over a 10 month period. In addition, the Certificate level women receive 100 NRs per month on a special work-study program sponsored by RCUP. Thus, women at the Certificate level receive a total of 300 rupees per month (approximately $17 based on exchange rates in late 1984).

Women studying at the Diploma (B.Sc.) level receive 4000 rupees per year from the RCUP. They are also eligible for a Tribhuvan University scholarship given to one female student in each year at the Diploma level based on academic standing.

Lack of appropriate funds to meet living expenses is a constant problem for the female students studying at the Certificate level and the one they most often expressed to me during my stay. Actual student

expenses for an academic year are estimated at 5000 rupees (500 rupees over a 10 month period). Yet the female students receive only 300 rupees per month, 250 of which is needed for food alone. The 50 rupees left each month is grossly inadequate to cover the remaining expenses for books, materials, travel, clothes and medical needs.

In response to these financial difficulties, the RCUP volunteered funds to increase stipends for all the students it supports at IRNR, including the women. The IRNR administration declined the offer with the argument that it is unfair to raise stipends while faculty salaries have seen no increase and to be fair to students whose families finance their education.

Financial incentives such as scholarships and stipends are crucial to attract women to IRNR. However, the financial support provided should adequately cover living expenses since women generally cannot expect additional financial support from their families. In explaining their financial difficulties to me, the women stated that male students generally receive money from home to help cover expenses whereas they, as women, received no money from home. Thus, the women's practical ability to attend IRNR hinges on whether they can meet all their living expenses with the stipend they are given. The experience of women at IRNR is evidence that the present stipend program is inadequate and should be revised.

Recommendation: that IRNR implement a scholarship program modeled on the "Equal Access Scholarship Program" of the IAAS. Here again, coordinating efforts could help to standardize procedures for all technical institutes of TU with regard to financial support for remote area and female students.

The IAAS scholarship provides 4000 rupees ($250) annually paid out over a 10 month period for females and remote area students.

Stipends for women at IRNR are presently funded by the RCUP. However, once the RCUP has reached the end of its contract which is expected in the next few years, financial support for women at IRNR must come from some other source.

Recommendation: that future support for women at IRNR should come through scholarships sponsored by Tribhuvan University. In order to assure that training for women at IRNR is self-perpetuating, support for the program must be internalized within the government of Nepal. Stress should be laid upon the necessity to change Tribhuvan University regulations to provide adequate financial support rather that relying on the short-term measures such as foreign supported aid.

SECTION III

EMPLOYMENT PROSPECTS FOR FEMALE IRNR GRADUATES

It is extremely important to keep in mind the original purpose for training women at IRNR when considering the issue of employing female IRNR graduates. Like all other IRNR students, the women are being trained in an effort to provide qualified middle-level personnel for positions within various departments of the Ministry of Forests and Soil Conservation. However, the employment issue for female IRNR graduates centers on the fear that the female graduates will be placed in positions within the Ministry where they will not be given the opportunity to use their professional and other unique skills.

The objective of sending women for training at IRNR was to provide a cadre of trained professional women to be the connection between rural women and renewable natural resource development schemes. In order to fulfill that objective, the female graduates of IRNR will need to be placed in positions where they can be involved in or conduct programs that target rural women as participants and beneficiaries. This section explains the problems surrounding this issue and offers some recommendations for actions to assure that the training of women at IRNR meets the original mandate of the program.

Putting Women in the Field

Most of the debate over the employment of female graduates stems from the question of whether women are capable of performing the duties required of the profession, especially in field situations. Many government officials have expressed the opinion that women will not work

as well as men in field situations due to the rigors of the profession (NRA, 1984). They also expressed a concern that problems would arise for women placed in the field due to certain Nepali customs regarding security for women (for example, women generally do not travel alone, live alone, nor associate freely with men). This attitude and concern on the part of officials within the Ministry of Forests could have major implications for female forestry personnel by excluding them from posts in rural areas and thus contact with the population they were intended to help. Not allowing women to take field positions would create a placement policy for female personnel in opposition to the idea of using women most effectively as extension agents or in other positions where they will have close contact with rural people, especially women.

The story of Pratima Tiwari is an example of how this attitude works to keep women out of field posts. Before the IRNR program was implemented, Ms. Tiwari was sponsored by the RCUP at the All India Forestry College (AIDC) in Dehredun, India. Ms. Tiwari graduated from Dehredun with the same credentials and training as a District Forestry Officer(DFO) and wished to be placed in a position as a DFO. However, she was placed in the Department of Forest's Remote Sensing Institute because it was thought that a research-oriented position was a more suitable job for a female (Pradhan, personal communication, 1984). The RCUP felt that this young woman could have been the dynamic example of how well women can work in the field given her own particular capabilities and her desire to work with rural people.

National Seminar on the Employment of Female IOF (IRNR) Graduates

In an effort to discuss and further investigate the issue of employment, the National Seminar on the Employment of Female IOF (IRNR)

Graduates was held in Kathmandu, May 16-18, 1984. (The seminar was sponsored by the IRNR, the RCUP, Tribhuvan University, the Department of Soil Conservation and Watershed Management, the US Agency for International Development and the South-East Consortium for International Development.) Participating in the seminar were the major employing government agencies of renewable natural resource personnel (i.e. departments within the Ministry of Forests and Soil Conservation) and organizations and individuals concerned over the issue of IRNR female graduates' employment prospects.

The seminar served two major functions: (1) It brought to light the fact that there are many vacant posts for natural resource personnel within the Ministry. In the Department of Forests alone, there are more that 600 vacant positions for rangers and junior technical assistants. An equally large number of positions are also vacant in the Department of Soil Conservation and Watershed Management (NRA,1984). (2) The seminar helped to raise awareness among employing agencies of the need to employ the female graduates of IRNR in positions which utilize their specific skills and abilities as resource managers. The seminar concluded with recommendations to investigate in greater depth the opportunities and problems associated with employment of female IRNR graduates.

Female Student's Job Preferences

To try to address these problems, it was first essential to ask the female students what they wanted in terms of employment. Among the students at IRNR, it is generally taken for granted that the great majority of them will enter government service, first as rangers or junior technical assistants for students completing the Certificate level training, and later as gazetted officers in mid-level positions upon

completion of the Diploma program.

The female students expected to follow this rather standardized career pattern. In response to survey questions (see appendix 1 for sample), the women all expressed interest in doing nursery management, extension work, or research, in that order of preference. A typical response came from Raj Kumari Malla, a second-year female student from Myagdi, who answered, "When I finish my studies I would like to go to the village and tell the people how to stop deforestation, why fuelwood is scarce and why soil erosion is happening. I could do any job but I prefer to do extension work so that I can teach my brothers and sisters in the villages to stop these things from happening."

In general, the women had a very positive and defined view of what they would like to do. This vision focused heavily on their role as extension agents and teachers in rural posts. Their comments also reflected a strong, patriotic commitment to solving the environmental problems so evident in Nepal. They also seemed confident of their abilities to work in the field as is evident in the following response from Bijaya Laxmi Lama: "As I have been taught in IRNR to work for my country and my people, I have no reservations about working for HMG(His Majesty's Government). I have been taught the same things as the boys so there will be no difficulties for me to work even though I am a woman."

Survey of Major Donor and Other Organizations

There are many organizations operating programs in Nepal aimed at developing renewable natural resources. I developed a survey based on the possibility that organizations such as FAO, UNDP, UNICEF and many others could offer an alternative employment option to the female graduates of IRNR (see Appendix 2 for sample). The purpose of the survey

was to gauge the interest of organizations in employing Nepali women trained in renewable natural resource management. The main questions the survey asked were: (1) whether the organization would find it useful to hire a female IRNR graduate; (2) whether there were actual job openings within the organization which the women could possibly fill; and (3) whether they foresaw any difficulties in terms of social inhibitions or security problems associated with hiring a Nepali woman. (See appendix 4 for a sample of the questionaire.)

All but one organization out of 21 surveyed responded very favorably to the first question by saying that they would find it very useful and desirable to hire a Nepali woman for their staff. Many responses spoke of getting more women involved in their projects particularly at the village level. The answers also stressed the idea that professionally trained women would be able to empathize with other women and be especially helpful to the organization in the areas of extension, fuel-efficient chulo stove installment and other projects which involve increasing the participation of rural women.

In response to the second question about actual positions, it became evident that the majority of the organizations cannot directly hire Nepali staff. Most development projects in Nepal are collaborative efforts between the donor organization and the Government of Nepal (GON) where the Nepali staff is provided by GON. Thus most of the Nepali personnel working on collaborative development projects funded by organizations such as FAO, USAID, UNDP are attached to a department within the Ministry of Forests and Soil Conservation. Although many organizations expressed a desire to have more women on their staffs, they rely on GON to provide them with personnel.

Non-government organizations (NGOs), however, can make direct hire of

Nepali staff. All of the NGOs surveyed were very interested in the idea of hiring a Nepali woman to help with their more grass-roots oriented approach to renewable natural resource management. CARE/Nepal stated that they had immediate openings for staff which they hoped to fill with a female graduate of IRNR.

Answers were mixed with regard to the difficulties of employing a Nepali woman on their staff. Most organizations recognized that there may be problems of sending Nepali women to field situations but expressed a willingness to give it a try. Other answers expressed a spirit of compromise to any cultural or security problems which might arise for women in the field. To quote George Axinn, the FAO Country Representative for Nepal, "The biggest problem is getting the first few employed. After several have been successful, it will be easier. Social arrangements will have to be made so that both female staff members' families and the local people are satisfied."

Outlook for Employment

The findings in the above paragraphs are highlighted by these central points:

(1) The Ministry of Forests and Soil Conservation has many vacant posts to fill which should give them a great amount of leeway to place women in jobs they prefer and will meet the mandate of the training program for women.

(2) Women studying at IRNR have stated that they would most prefer jobs in nursery management and extension. They have also expressed a strong committment to solving renewable natural resource problems, especially in the hills.

(3) There is an expressed desire for female personnel to work with

donor organization-GON collaborative projects in areas of the project involved with actitities directed at women.

These findings clearly indicate that there are opportunities for the female graduates of IRNR to fill a new role in the forestry sector focusing on extension and other renewable natural resource development efforts directed at rural women. The greater question of women's capabilities must be answered in the future. But in order for those capabilities to be judged fairly, women must be placed in positions that will allow them to express their unique skills and commitments. The question should not hinge upon whether the women handle a chainsaw as well as men but rather how well they perform the tasks they were intended to perform.

Recommendations

It is extremely important to the success of the training program for women at IRNR that the first group of female graduates be allowed to work in positions where they can both prove their abilities as professional foresters and resource managers and contribute their efforts to reaching the rural women of Nepal to increase their activity in the forestry sector. Placement of the first graduates is especially significant since it will likely set a precedent for placement of future graduates. The following are recommendations designed to help the training program for women at IRNR meet its desired goals:

Recommendation: that GON make a policy of placing female graduates of IRNR in positions which will enable them to work on projects directed at increasing the involvement of rural women in renewable natural resource schemes. One viable option for such placement is to attach women to donor organization-GON collaborative projects such as RCUP, the

Nepal-Australia Forestry Project and FAO's Community Forestry Programme, where there is an expressed need for female extension and outreach personnel.

Recommendation: that GON create new positions for female personnel to work on developing or implementing such needed projects as women in extension, women in nursery management, women in livestock management and fodder production, and women in fuel-efficient chulo stove use, to name only a few.

Recommendation: that RCUP employ at least the four women that were recruited from RCUP's districts in the capacity of nursery managers, extension agents, or chulo stove technicians. Not only does this recognize the women's job preferences but it also sets a precedent for placing women in field posts near their homes.

Recommendation: that the female graduates themselves be their own most forceful lobbyists. It is ultimately the responsibility of the female graduates to seek the sort of work they prefer. They must make every effort to find support and backing from RCUP and IRNR to help them negotiate with the Ministry of Forests and Soil Conservation for prefered postings.

Recommendation: that women consider seeking employment outside GON with non-government organizations involved in more grass-roots level work. Employment outside of GON should be considered as only a stop-gap measure which recognizes female students' job preferences and can help redefine the role of women in forestry by placing women in visible positions which focus on community forestry activities and extension work.

Recommendation: that female graduates at the Diploma level be given positions as DFOs or DCOs if they so desire. Women must eventually be represented in positions of authority within the Ministry of Forests and

Soil Conservation in order to influence perceptions and policy from within the government system. Placing a women in a position such as DFO would be a positive move in this direction.

SECTION III

SUMMARY AND RECOMMENDATIONS FOR FUTURE ACTIONS

The training of women at the Institute of Renewable Natural Resources has the potential to greatly affect renewable natural resource use by targeting women as participants in forestry sector development efforts. This report has addressed ways in which the training program for women at IRNR can be improved to assure that it meets its original mandate.

Among the suggestions offered were two major recommendations: (1) that the government of Nepal place female graduates in positions which will allow women the opportunity to prove their abilities, match their own job preferences and meet the program's primary objective of providing a link between rural women and government sponsored renewable natural resource development schmemes; and (2) that IRNR offer further financial incentives to attract women to IRNR, remove barriers to their admission such as exclusionary application procedures, and assure their continued entry with an expanded reserved seats policy.

Future Actions

Follow-up to some of the recommendations and questions raised in this report will be necessary to answer some future questions and problems concerning the training of women at the IRNR. The following are some suggestions for further study and other efforts to assure continued support and attention for women in Nepali forestry.

Impact of women working in the forestry sector: Once women have been employed by GON or other organizations, future study will be needed to evaluate the overall impact of women working in the forestry sector. The question of how women are being employed by GON is especially crucial to

investigate considering the present debate on this issue.

Coordination on Training Programs for Women: There is also a great potential for a more coordinated effort for training programs involving women in the agricultural and forestry sectors. Many of the problems and solutions to those problems are similar for the women studying at the IAAS and the IRNR. Future concern should focus on the problems at both institutes and the bigger question of the impact such training programs are having throughout Nepal.

Para-professional training programs: The issue of para-professional training also deserves future attention. The program to involve more women in Nepali forestry through training could be greatly expanded to include para-professional education and training programs. The RCU Project has a history of conducting such training programs for village women. One example is the recent effort specifically targeting women for training in the production and harvesting of Daphne, a bushy tree which is used for paper making in Nepal. However, more such training programs are needed to reach a greater number of village women throughout Nepal.

Female literacy: There is also a need to put more effort and coordination behind female literacy programs due to the link between the issue of female education and a woman's ability to attend training programs such as at IRNR.

Role Models: One final issue not discussed in this report is the need for women attending training programs such as IRNR and IAAS to have role models. Employing female faculty or staff persons could greatly facilitate communication between the female students and the administration. It could also provide an advisor to the women who boost their moral and encourage their confidence.

APPENDIX 1

SURVEY OF WOMEN'S ATTITUTES TOWARDS EMPLOYMENT

Survey of Female IRNR Student's Opinions on Employment *

This survey is designed to gauge the opinion of the female students at IRNR who have now completed ome year of study. This survey will offer information which should increase the understanding between the women, the school administration and employing agencies. You can help facilitate this understanding by answering the following questions as thoroughly as possible.

(1) What sort of forestry-related work do you want to do when you finish your studies at IRNR?

(2) After completing your studies, what do you think would be your most useful contribution to the renewable natural resource problems which Nepal is now facing?

(3) Who do you wish to work for?

(4) Do you have any reservations about working for HMG? Do you think there will be difficulties or discrimination because you are a woman ?

(5) Are you interested in working for private organizations which conduct more grass-roots oriented projects in Nepal?

* This survey was translated into Nepali by my interpreter Sushila Nepali. It was also explained verbally to the girls. Although I was most interested in responses from the second-year women, the new group of girls also completed the survey, giving answers strikingly similar to the second-year women. It is my opinion that all the women consulted with each other to some degree on their answers. As a result, the answers were very homogeneous and easy to translate into generalizations about the women's desires for employment.

APPENDIX 2

SURVEY OF JOB OPPORTUNITIES FOR FEMALE IOF(IRNR)GRADUATES AMONG MAJOR DONOR AGENCIES AND PRIVATE ORGANIZATIONS IN NEPAL

Survey questions:

(1) Would your organization find it useful or desirable to hire a female graduate of the IRNR trained in renewable natural resource management. If yes, explain why.

(2) Are there actual positions available for natural resource managers within your organization?

(3) Would there be difficulties for your organization to hire a Nepali woman?

(4) Please use this space for other comments.

List of Organizations Surveyed

-Care, Inc.
-Save the Children Federation, Inc.(USA)
-Save the Children Federation, (U.K.)
-United Mission to Nepal
-International Center for Integrated Mountain Development (ICIMOD)
-World Neighbors
-Swiss Association for Technical Assistance (SATA)
-Food and Agricultural Organization of the UN (FAO)
-United Nations Children Fund
-Nepal-Australia Forestry Project
-World Bank
-National Research Associates (NRA)
-Integrated Development Systems (IDS)
-Agricultural Development Council
-Agricultural Projects Service Center
-New Era
-United States Agency for International Development
-Nepal/United Kingdom Silvicultural Research Project
-Kosni Hill Area Rural Development Project (U.K.)

APPENDIX 3

"EDUCATIONAL OPPORTUNITIES FOR WOMEN AND REMOTE AREA STUDENTS AT THE INSTITUTE OF RENEWABLE NATURAL RESOURCES"*

*Although presented here in English, this piece was translated into Nepali and printed into a small pamphlet for distribution. Funds were provided by the RCUP for printing 3000 copies.

Educational Opportunities for Women and Remote-Area Students at the Institue of Renewable Natural Resources

Introductory Note:

The Institute of Forestry/Institute of Renewable Natural Resources (IOF/IRNR), presently located in Hetauda, offers training to young men and women in the fields of Forestry, Soil and Water Conservation, and Wildlife Management. The purpose of this bulletin is to explain admission requirements and the availability of scholarships and stipends to encourage students, especially those from the hill regions of Nepal, to consider an educational in natural resource management.

Backgroung:

In August of 1983, IOF/IRNR admitted its first female students. Six young women began their first year of Certificate level studies and one began her first year of study for a Bachelor of Science (B.Sc.) in Forestry. Under assistance from the South-East Consortium for International Development, the Resource Conservation and Utilization Project (RCUP) provides funds for scholarships and stipends to all female students who attend IOF/IRNR. There is also a provision that a minimum of 10% of the seats are reserved for females. In August of 1984, IOF/IRNR met that goal by selecting 11 females candidates from the 51 total females who applied.

The IOF/IRNR also reserves seats for students from remote areas of Nepal and actively encourages their application and admission.

The IOF/IRNR is divided into two campuses, one in Hetauda and a new campus under construction in Pokhara. When construction is completed, the Diploma (B.Sc.) program as well as a new Certificate level program will move to Pokhara campus from its present site in Hetauda. Hetauda campus will continue to teach a Certificate level program in Forestry. Students applying to IOF/IRNR for Certificate training may choose to apply to either campus.

Scholarships and Stipends:

All students of the Pokhara campus in good academic standing who are not receiving any other financial support will receive a stipend or scholarship provided by funds from RCUP. Students at the Certificate level will receive 2000 NRs. per academic year to cover living expenses. All female students at IOF/IRNR receive the above stipend plus an allowance for suitable clothing for field work. Work-study grants are also available to female students which provide an additional 100 NRs. per month.

In addition to these stipends, 10% of the students in each year's Certificate and Diploma programs will receive scholarships based on academic excellence. One scholarship will be provided to an outstanding female and one to an outstanding remote-area student in each year of each program. For the first year of the Diploma (B.Sc.) program, two scholarships for outstanding females and two for outstanding remote-area students will be awarded.

How to Apply:

Students generally make their application to IRNR in person, presenting their documents directly to the Dean's office in Hetauda. After completion of the Pokhara campus in January 1986, applications can also be made to the Dean's office in Pokhara.

Students from remote areas who are unable to make the trip to Hetauda (or Pokhara) should contact District Education Offices (DEO's), District Forest Offices (DFO;s), District Conservation Offices (DCO's) or Women Development Officers nearest their home for assistance in applying to IRNR.

Applications are due one month before classes begin. For the Certificate program, the application deadline falls during the month of August. For the Diploma program, applications are accepted twice per year, in June for those applying with a B.Sc. in General Science and in October for those entering with a Certificate and three years field experience.

APPENDIX 4

"BULLETIN OF THE INSTITUTE OF FORESTRY/INSTITUTE IR RENEWABLE NATURAL RESOURCES
ACADEMIC YEAR 2042-2043 (1985-1986)

BULLETIN OF THE INSTITUTE OF FORESTRY/INSTITUTE OF RENEWABLE NATURAL RESOURCES
ACADEMIC YEAR 2042-2043 (1985-1986)

HISTORY

The Institute of Forestry (IOF) was established under His Majesty's Government (HMG), Department of Forests in 2004 B.S. (1941 A.D.) to provide a training program for rangers and foresters within Nepal. With the assistance of the Indian Co-operation Mission, a campus was constructed in Hetauda in 2028 B.S. (1965) which today still houses the Proficiency Certificate training program. In 1972, the Institute of Forestry was incorporated along with other technical institutes under the Tribhuvan University system.

DEVELOPMENT

In response to the growing challenge of managing Nepal's diverse natural resources, the Institute has recently undertaken a program of expansion and development. To mark this growth and to project modern concepts a proposal was made to change the name of the Institute of Forestry to the Institute of Renewable Natural Resources (IRNR). With funding from the World Bank and the United States Agency for International Development (USAID), IRNR began classes in temporary facilities at Pokhara in 1981. A new Pokhara Campus is presently under construction with an expected completion date in early 1986. Although both campuses are temporarily housed at (IOF) Hetauda, when construction is completed the Diploma (B.Sc.) program as well as a new Proficiency Certificate level program will move into the new Pokhara facilities. The Hetauda campus will continue to teach a Proficiency Certificate level program in Forestry.

The Pokhara Campus was established to meet the growing demands for trained natural resource managers in Nepal. The curriculum at the Pokhara campus focuses on an integrated approach to natural resource management with a special concern for the growing problems of fuelwood and fodder scarcity in Nepal's hill regions. Pokhara was chosen for the new campus site because of its location in the Middle Hills region of Central Nepal and its greater accessibility to students from remote regions. In addition to its B.Sc. and Certificate programs, the Pokhara campus will also offer short-term training to natural resource managers presently employed by various HMG conservation agencies to keep them informed of current developments in social forestry and other management practices.

FACILITIES

The Hetauda campus facilities include administrative and classroom buildings enclosed in a park-like compound of 90 hectares of forested land. Men's housing facilities are located on-campus while the women's hostel is within close walking distance to the campus. Also located on-campus are a large sports field for physical training and various research stations including a small nursery.

Upon its completion in early 1986, the Pokhara campus will consist of administrative and classroom buildings, a library, a student center, laboratories and workshops There will also be male and female hostels with a capacity for housing 400 students Faculty housing will also be located on-campus

RESEARCH ACTIVITIES

The Institute of Foresty at Hetauda has been conducting research on the relevant areas of forestry and soil and water conservation for many years. The major facilities to carry out research activities are located at (a) Khairani Tar, Tanahu District, (b) Nibuwatar, Makwanpur District, and (c) Tamagarhi, Bara District representing middle hills, inner Terai and Terai ecosystems respectively. Research programs have concentrated on.

1 Watershed Reforestation Techniques.
2. Erosion and Gully Control, and
3 Agro-forestry Techniques.

The Institute of Forestry has recently begun research on Farm Forestry activities under a grant from the Canadian based International Development and Research Center. The main objective of the Farm Forestry program is to develop sound techniques of extending forestry practices onto private farmland in a manner appropriate to Nepal. The research sites under this project are located at (a) Karmaiya, Sarlahi District, (b) Parwanipur, Parsa District, (c) Khairani, Chitwan District, (d) Rampur. IAAS plots, (e) Taranagar, Gorkha District, and (f) the IRNR site in Pokhara.

FINANCIAL AID

With funds from the USAID-Resource Conservation and Utilization Project, (RCUP) the Pokhara program provides scholarships and stipends as incentives to recruit high quality students, to increase the percentage of females admitted, to encourage students from remote areas of Nepal to seek admission, and to promote academic excellence

All students of IRNR Pokhara campus in good academic standing who are not receiving a stipend or scholarhip from any other source, and who are not receiving a departmental salary, educational leave pay or other financal support, may receive a stipend Students at the Certificate level will usually receive 2000 NRs per academic year while B.Sc. students will generally receive 4000 NRs per academic year

In addition, 10% of the students in each year of each Certificate and B Sc Diploma class will receive scholarships awarded for academic excellence. Scholarships will also be provided to encourage applications and academic excellence from females and students from remote areas

The Hetauda campus offers stipends to 25% of its Certificate level students. These stipends are awarded based on superior academic performance. Two students from remote areas and one student without financial resources are awarded stipends from within the total 25% selected. In addition, tuition and fee waivers, or Freeships, are awarded to 14 students based on financial need plus academic merit.

WOMEN AND REMOTE AREA STUDENTS

One of the goals of the Pokhara program is to attract students from remote areas and females for training in renewable natural resource management. To meet this goal, the Pokhara program reserves seats for both remote area and female students and actively encourages them to apply. As special incentive, the Pokhara program offers scholarships to these students, based on academic merit.

In 2040 (1983), IRNR enrolled its first female students in both the Certificate and Bachelor of Science in Forestry programs. By Bhadra, 2041 (August 1984) it had met its goal of filling 10% of the available seats with female candidates.

ACADEMIC INFORMATION

IRNR offers two programs of study, Proficiency Certificate training in Natural Resource Management or Forestry and the more advanced Diploma (B Sc.) program in Forestry, Soil and Water Conservation or Wildlife Management. The Hetauda campus offers a 2 year Certificate level program in Forestry accepting 110 students per year.

The Pokhara campus presently offers a 3 year B.Sc. course of study for those students who have completed the Proficiency Certificate program and three years of work experience. Students entering with a B Sc in General Science may complete the course in two years. The Pokhara campus will also offer a new Proficiency Certificate program in natural resource management for 110 students per year when construction of the new campus is completed. Students applying to IRNR for Certificate training may choose to attend either campus.

CERTIFICATE PROGRAM IN RENEWABLE NATURAL RESOURCES

The Certificate course has been designed primarily to provide training for young men and women who wish to work in the Ministry of Forests initially at a junior supervisory level (foresters and soil and water conservation technicians). The course is completed in two academic years. The first year's study focuses on basic education and introduction to natural resource management. The second year provides extensive field experience for a practical grounding in natural resource conservation. Although all students undertake the same course of study, there are opportunities both during field experience and in the 2nd year for individual project work.

Course Schedule

Year One
Nepali
English
Mathematics and Calculation
Basic Silviculture and Forest Conservation
Soil and Water Conservation
Introduction to Renewable Natural Resource Management
Practice of Renewable Natural Resource Management
Introduction to Biology and Plant Identification
Introduction to Extension Work in Natural Resource Management
Surveying and Engineering
Regular Field Works, Part I
Physical Training and Games, Part I

Year Two
Nepal Parichaya
Law and Administration Related to Natural Resources
Wildlife Conservation in Nepal
Agriculture and Rural Sociology/Village Crop and Livestock
Harvesting and Logging
Basic Forest Protection
Personnel Management and Accounting
Work Practice, Hand Tools, Efficiency and Maintenance
Timber Utilization and Intermediate Technology
First Aid, Health and Hygiene
Physical Training and Games, Part II
Regular Field Works, Part II
Attachment to Project Evaluation

Certificate Courses:

Nepali: Nepali Grammer, general knowledge of the language, expression and presentations.

English: Outline of basic English language terminology related to renewable natural resource conservation, practice in effective communication in written and spoken English.

Mathematics and Calculation: Mathematic methods and techniques applicable to the field of forestry, statistics and elementary forest mensuration.

Basic Silviculture and Forest Conservation: Classification of forests, concepts of succession, basic management objectives, silviculture of selected species. Concepts and techniques of forest conservation.

Soil and Water Conservation: Basic meteorology, introduction to hydrology and physical properties of soils, effect of different land use practices on soil and water conservation, causes and control of erosion.

Introduction to Renewable Natural Resources Management:
Covers geology, physiography and climate of Nepal; basic concepts of plant and animal ecology, development and use of forest products; government and private organizations concerned with natural resources in Nepal.

Practice of Renewable Natural Resource Conservation:
Basic forest nursery techniques; establishment of tree and cover crops across the range of site types in Nepal, maintenance of forest cover crops.

Introduction to Biology and Plant Identification:
Overview of the structure of plant and animal kingdoms, identification of important forest fungi, insects, birds and mammals, study of animal and plant life cycles.

Introduction to Extension Work in Natural Resource Management:
Training, demonstration and instructional techniques; review of communication and organizational skills necessary for effective extension programs.

Surveying and Engineering: Techniques of surveying; use of chain, compass and plane table survey; work of a surveyor in the field and office

Regular Field Works:

Part I Field trip of a week duration in the mountains as well as the Terai regions.

Part II Field trip of 20 days duration to observe different forests, forestry practices, forest based industries, and forest-related activities

Physical Training and Games: Physical excercises to maintain student's fitness; drills, jogging, and other athletic activities

Nepal Parichaya: The geographic, historical, administrative, economic, social, linguistic and literary disciplines of Nepal from ancient to modern times, overview of arts and foreign policy of Nepal from ancient to modern times

Law and Administration Related to Natural Resources:
Introduction to policy and implementation of Nepal's Forest Laws, overview of rules and regulations which apply to forest use and wildlife conservation in Nepal

Wildlife Conservation in Nepal:
Review of the major wildlife species in Nepal, their habits and prefered habitats; conservation practices related to wildlife; related regulations and laws governing protection.

Agriculture and Rural Sociology/Village Crop and Livestock:
Social structure of rural communities in Nepal; the working of village economies; aspects of natural resource conservation in local community development; impact of farming systems on land use, major crop and livestock types used in farming in Nepal

Harvesting and Logging:
Harvesting techniques, grading, storage and protection of felled timber

Basic Forest Protection:
Factors causing damage to trees and plants; life cycle of important biotic agents, basic fire protection; remedial and control actions against forest pests.

Personnel Management and Accounting:
Responsibilities of the supervisor; basic human relations, basics of accounting and bookkeeping.

Work Practice, Hand Tools, Efficiency and Maintenance:
Correct and incorrect procedures in basic work tools; safe work practices, routine maintenance procedures.

Timber Utilization and Intermediate Technology:
Structure and quality of hardwoods and softwoods; conversion of wood into sawn timber and other products; main uses for wood

First Aid, Health and Hygiene:
Fundamental aspects of human anatomy and physiology; instruction in correct first aid procedures; basic principles of good health and hygiene in rural areas.

Attachment to Project Evaluation: Field stay of 10 days on each site

Gorkha	RCUP works, surveying, demonstration, trail improvement, trekking, fencing.
Sauraha	Chitwan national parks, jungle survival exercise.
Chautara	Community Forestry project works, nursery and plantations practices, trekking.
Sagarnath	Sagarnath forestry project works, Terai plantations, nursery works, logging,felling, charcoal production works.

B.Sc.(DIPLOMA) PROGRAM IN RENEWABLE NATURAL RESOURCES:

The diploma course runs for three years and prepares students to become Forest Officers and Soil and Water Conservation Officers under the Ministry of Forests. Training is also provided in Wildlife Management. The first two semesters concentrate heavily on the basic sciences. In the second year the basic applied sciences of forestry and soil and water conservation are covered. In the final year students take several specialized courses which are taught within their discipline.

The following abbreviations are used to indicate courses offered only to students within the stated discipline. F = Forestry, S = Soil and Water Conservation, W = Wildlife Management

Course Schedule

	Full Marks
Year One*	
English	100
Algebra and Trigonometry	100
Calculus and Introduction to Coordinate Geometry	100
Introductory Botany	100
Introductory Zoology	100
Introductory Chemistry	100
Introductory Physics	100
Year Two	
Hydrology	50
Introduction to Soil Science and Geology	100
Introductory Statistics	50
Human Resource Management	50
Surveying, Mapping and Draftsmanship	50
Accounts and Procedures	50
Resource Economics	100
Ecology	105
Animal Physiology (W)	50
Soil and Water Conservation Engineering (S)	50
Forest Mensuration (F,W)	50
Plant Physiology (F/S)	50
Year Three	
Silviculture	100
Forest Engineering (F,W)	50
Harvesting, Logging and Utilization of Forest Products (F)	100
Remote Sensing	50
Seminar in Forest Management (F), Soil and Water Conservation (S) and Wildlife Management (W)	25
Soil Genesis, Morphology and Classification (S)	50
Forest Protection (F)	50

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* Students entering with a B.Sc. in General Science begin their studies at IRNR with a capsule course introduction to natural resource management. They then proceed directly to the second year of course work.

Soil Fertility and Plant Nutrition (S)	50
Irrigation and Drainage (S)	50
Watershed Management (S)	100
Habitat Improvement and Wildlife Conservation (W)	100
Wildlife Management Techniques (W)	50
Wildlife Biology (W)	50
National Park Administration and Management (W)	50
Ornithology and Mammology (W)	75
Statistical Methods and Experimental Design	50
Agricultural and Range Management (F,S)	75
Elective	50

English:

Definitions of tehnical terms and comprehension of typical scientific literature; report, essay and letter writing; use of the library

Algebra and Trigonometry:

Calculus of areas, volumes, and quantities used in soil engineering, forestry, construction and land surveying; trigonometrical functions in the volumetric mensuration of individual trees, forest stands and felled timber.

Calculus and Introduction to Coordinate Geometry:

Co-ordinate geometry and graphical methods, advanced calculus.

Introductory Botany:

Taxonomy, the origin and evolution of domestic plants; biological site responses of some important species.

Introductory Zoology:

Classification and phylogeny of the animal kingdom ; study of internal structure and organization of important representatives. Origin and evolution of domestic and other important animals.

Introductory Chemistry:

Principles of inorganic and organic chemistry, bio-chemistry, chemical structure and reactions; laboratory exercises.

Introductory Physics:

Physical principles underlying the properties of living organisms, physical features of the earth's surface and mechanisms.

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Hydrology:

Basic concepts of meteorology and hydrology, measurement and estimation of factors in the hydrologic cycle; evaluation of meteorologic and hydrologic factors in relation to foresty and soil conservation management planning.

Introductory Geology and Soil Science:

Process and formation of minerals and rocks; geological formations, geologic history and major geologic formations of Nepal, nature and properties of soils, soil management for natural resource utilization and conservation.

Introductory Statistics:

Basic concepts and limitations of standard statistical procedures, descriptive statistics and sampling; hypothesis testing.

Human Resource Management:

Study of traditional values, human resources and various interactions among human communities, human resources planning and motivation.

Surveying, Mapping and Draftsmanship:

Principles of land surveying and draftsmanship; mapping in Nepal, mapping as related to land use management.

Accounts and Procedures:

Principles of bookkeeping, accounts, costing and estimating, particular attention given to economic theory, land as capital and simple accounting for an enterprise

Resource Economics:

Economics of natural resource management and policy analysis, cost-benefit analysis, special economic problems of natural resource use in Nepal

Ecology:

Physical, chemical and biotic factors of the environment, structure and classification of ecosystems, plant and animal communities in Nepal; effects of various management practices on the ecosystem

Animal Physiology (W)

The biology of organisms, physiological processes of animals and their adaptation to their environment.

Soil and Water Conservation Engineering:

Design, layout and construction of terrace systems, grassed water-ways, holding basins, drop control structures, ponds, dams, and other structures used for water conservation, erosion and flood control

Forest Mensuration (F,W):

Inventory, measurements and sampling of felled or standing timber, advantages and limitations of various volume calculations

Plant Physiology (F,S):

Elementary cell biology; the physiological processes of higher plants in relation to their environment; the biology of micro - organisms and fungi

Silviculture:

Principles and practice of silviculture and its application to Nepal, silvicultural systems, methods of planting and maintenance of young forest crops.

Forest Engineering (F,W):

Simple and indigenous techniques for building construction, bridges, forest trail improvements and construction of roads and fire lanes

Harvesting, Logging and Utilization of Forest Products (F):

Covers the range of economically feasible methods of forest harvesting now in use and their application in Nepal.

Remote Sensing:

Aerial photography and satellite imagery, preparation of maps from aerial photographs; evaluating and monitoring the environment through the use of aerial photography

Seminar in Forest, Watershed or Wildlife Management:

Special topics, critical reviews and discussions of pertinent literature throughout a wide range of subject areas in forestry watershed and wildlife management; student presentations.

Soil Genesis, Morphology and Classification (S):

Factors of soil formation, principles of soil classification, model classification systems and their application to Nepal, soil mapping, field and laboratory exercises relevant to soil genesis and classification

Forest Protection (F):

Pests and deseases of trees and higher plants; control and salvage operations in forest protection, fire fighting

Soil Fertility and Plant Nutrition (S):

Relaticinships between soil nutrition and plant growth, nutrient chemistry of soils in Nepal; nutrient cycles and their relevance to crop production in Nepal

Irrigation and Drainage (S):

Design, implementation and control of irrigation and drainage systems for agriculture and forestry in Nepal.

Watershed Management (S):

Physical, biological institution and social considerations of watershed management in Nepal, principles of watershed management

Habitat Improvement for Wildlife Conservation (W):

Methods to improve habitats for specific groups of wildlife; relationship of natural resource use to habitat destruction; range management, including wetlands and grasslands

Wildlife Biology (W):

Outline of wildlife distribution in Nepal, ecological and historical factors of wildlife management; population dynamics and manipulation.

Parks Administration and Management (W):

Concepts and objectives of National Park management, evaluation of social and economic impacts of National Parks in Nepal.

Ornithology and Mammology (W):

Biology of birds; behavior and ecology of common birds of Nepal; techniques of research, classification and time ranges of mammals; common mammals of Nepal.

Statistical Methods and Experimental Design:

Overview of statistical designs for biological research; analytical techniques in statistics, problems of reearch in renewable natural resource conservation in Nepal; computer application of statistics.

Agriculture and Range Management (F,S):

Farming systems and agricultural production practices in Nepal, management of livestock; range management and improvement; combination forest, fodder and food crop production systems

Wildlife Management Techniques (W):

Techniques used in protection and research procedures in wildlife science. Maintenance of wild animals, identification, ageing and trapping animals

Elective

Individual research for preparation of a paper in the students' area of interest

ADMISSION REQUIREMENT:

All Certificate level candidates are required to have passed the School Leaving Certificate (SLC) examination. Students with higher scores in English, Mathematics, and Science are given preference.

Admission requirements for B.Sc. candidates are as follows:

1. A B Sc. or Diploma in General Science (Physics, Chemistry, Math, Zoology or Botany) or

2. Certificate from (IOF-IRNR) plus 3 years practical field experience in Natural Resource Management (forestry, watershed management and wildlife conservation works).

HOW TO APPLY

Application forms for both Certificate and B Sc. programs are available from the Dean's office at the Hetauda and Pokhara campuses, both presently located in Hetauda

Applications are due in early Srawan (August) or at least one month before classes begin for Certificate and B Sc. (Forestry) programs

For application to the B Sc course, students with a Certificate in Renewable Natural Resources Management may apply in Ashwin (October) and those with a Diploma in General Science may submit applications in Ashar (June)

Remote area students should contact District Education and District Forest and Soil Conservation Officers nearest their home for aid in applying to IFNR. Students may also seek aid in applying from Women Development Officers in their panchayat.

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FACULTY:

Raibhandari, Mathura Das. Dean. B Sc.(TU),AIFC (Deh),M.S.(State University of New York).
Jaiswal, V.P. Assistant Dean (Administration). B.Sc.(BHU), AIFC(DEH), Trainings(France, U.K.).
Rayamajhi, Jyoti N. Assistant Dean(Academic). B.Sc.(TU),AIFC(DEH), M.S.(Virginia Polytecnic Institute).
Karki, Madhav. Pokhara Campus Project-in-Charge. B.Sc.(Hons.) (Ludhiana), M.S.Range Mgmt.(Colorado State).
Das, A.K. Lecturer. M.Sc.Bot.(TU),M.S.(Virginia Polytecnic Institute)
Joshi, S.B. Visiting Professor. B.Sc.(Burma), M.F.(Duke University).
Pradhan, P.N. Lecturer. B.Sc.(TU), AIFC (DEH).
Karmacharya, S. Visiting Professor. B.Sc.(TU), AIFC(DEH), M.S. (University of Wisconsin).
Deo, N.P. Visiting Professor. M.Sc.(Chem),AIFC(DEH), M.F.(Duke University)
Koirala, Bimal. Visiting Professor. M.Sc.(TU), M.F.(Duke University).
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Bajio, Mohan. Lecturer. B.Sc.(Hons.)Ag.(Hissar), M.F.R.(University of Georgia).
Bainju, Upendra. Visiting Professor. B.Sc.Ag.(Udaipur), M.Sc.For. Soils (Florida)
Poudyal, Bimal. Lecturer. B.Sc.(TU), M.Sc.For.(Pakistan).
Choudhary, S. Instructor. B.Sc.(TU), M.Sc.For.(Pakistan).
Lakhe, S.P. Assistant Lecturer. M.Sc. Zoology(TU), M.Sc.For. (Pakistan).
Dutta, M.S. Assistant Lecturer. M.Sc.(TU)
Haque, M.S. Assistant Lecturer. M.Sc. Chem.(TU).
Tuladhar, A.R. Assistant Lecturer. B.Sc.(TU), AIFC(DEH)
Rayachhetri, M.B. Assistant Lecturer. M.Sc. Bot.(TU).
Mehata, J.N. Assistant Lecturer. M.Sc. Zoology(TU)
Rana, S. Assistant Lecturer. B.Sc. Ag.(Allahabad)
Indu, I.P. Assistant Lecturer. M.Sc. Che.(TU).
Jha, P.K. Assistant Lecturer. M.Sc. Zoology(TU)
Bainju, Sarbani. Assistant Lecturer. M.Sc. Math.(TU)
Mishra, S.M. Assistant Lecturer. M.A. Math.(India).
Sharma, Keshab. Assistant Lecturer. B.Ed., M.A. Nepali(TU)
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Singh, A.K. Assistant Lecturer. AIFC(DEH)
Karki, J.B.S. Assistant Lecturer. AIFC (DEH)
Das, C.L. Instructor. M.Sc. For.(Pakistan)
Raibhandari, Anjana. Instructor. M.A.(Eng.)(TU)

Expatriate Faculty:

Amos, Dan F. Visiting Professor. B.S.(U.Kentucky State), M.S.(Univ. of Kentucky), Ph.D.(Michigan State University)
Heimen, Joel. Visiting Professor. B.Sc. Zoology(Michigan), M.S. Wildlife Ecl.

COMMITTEES

A. **Forestry Instruction Committee:**

1. Visiting Prof. Mr. Keshav Raj Kamal - Chairman
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6. Asst. Lecturer Mr. [illegible] - Member
7. Asst. Lecturer Mr. [illegible] - Member

Faculty Board

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12. J. N. Rayamajhi, Assistant Dean, IOF - Member
13. Madhav B. Karki, Program-in-Charge, Pokhara Campus - Member
14. Bimal Keshar Poudyal, Lecturer, IOF - Member
15. S. P. Lakhe, Assistant Lecturer, IOF - Member
16. K. P. Sharma, Assistant Lecturer, IOF - Member

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5. Assistant Dean J. N. Rayamajhi - Member
6. Visiting Professor Subarna Karmacharya - Member
7. Assistant Lecturer A.K. Singh - Member
8. Co-ordinator P. M. Dixit - Member

Personal Communications

(1) Madhav Karki, Program-in-Charge, IRNR
(2) Bimal Koirala, IRNR Faculty
(3) Prashwal Pradhan, Training Officer, RCUP
(4) Yam Malla, Training Officer, RCUP

References

(1) Acharya, Meena and Bennett, Lynn. 1981. The Rural Women of Nepal: An Analysis and Summary of Eight Village Studies. (The Status of Women in Nepal - Volume II, Part 9.) Kathmandu: CEDA, Tribhuvan University.

(2) Davidson, Debra and Cooper, Carol. 1983. Women and Resource Conservation and Utilization in Nepal. Occational Paper Series: Women in Development. South-East Consortium for International Development.

(3) Hoskins, Marilyn. 1982. Strategies for Involving Women in RCUP Activities and Benefits. SECID/Nepal.

(4) Hoskins, Marilyn. 1979. Women in Forestry for Local Community Development. Office of Women in Development: USAID, Washington, DC.

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(6) National Research Associates. 1984. Proceedings of the National Seminar on Employment of Female IOF(IRNR) Graduates. RCUP/IRNR, Kathmandu, Nepal.

(7) Pandey, Shanta. 1984. Women in Natural Resource Management. From Panchayat Darpan, A Journal of Local Development: Special Issues on Women's Development. Publication 46, 1984-85, no. 1. HMG/MPLD Training Material Production Center, Kathmandu.

(8) Pelinck, E., Manandhar, P.K., and Gecolea, R.H. 1984. Forestry Extension: Community Development in Nepal. Unaslyva. Volume 36, no. 143. pps. 2-12.

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