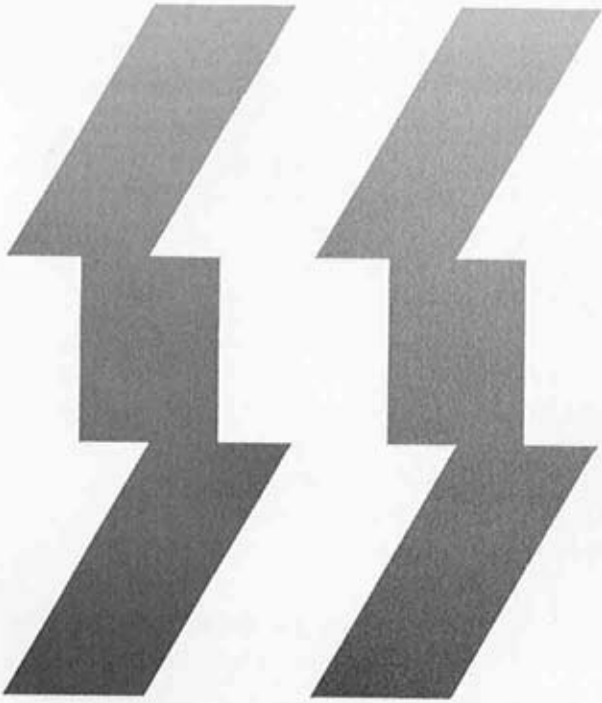
PENNSTATE

POPULATION AND ECOLOGY RESEARCH LABORATORY

1996 Annual Report



A joint undertaking of the Rural Resources Studies Program, Institute of Agriculture and Animal Science, Tribhuvan University, Nepal and the Population Research Institute, The Pennsylvania State University, USA.

The Population and Ecology Research Laboratory
Ganesh P. Shivakoti and William G. Axinn
Co-Directors

Directors' Statement

In 1994 the Institute of Agriculture and Animal Science (IAAS) of Tribhuvan University in Nepal and the Population Research Institute (PRI) of the Pennsylvania State University in the USA began the process of creating a joint social science research and training institution. The Population and Ecology Research Laboratory (PERL) opened on January 1, 1995. In its first year of operation PERL experienced a great deal of activity. This activity included launching two major research projects, training several IAAS and Penn State students, and hosting a number of exchange visits. Each of these activities contributed to PERL's research, training, and institution building aims.

In 1996 PERL had another busy year. PERL researchers trained a staff of fifty survey research interviewers, ten interviewer supervisors, six computer operators, six land use mapping staff, and six flora counting staff. Data collection activities in 1996 included collecting and analyzing more than 150 water samples, mapping land use in 132 neighborhoods, counting flora species on more than 250 plots, and collecting interview data from more than 1000 households and more than 4000 individuals. The PERL computing facility entered data from more than 3500 hour long interviews. PERL staff participated in an international conference on natural resources and population hosted by the Institute of Agriculture and Animal Science. Several exchange visits also took place during the year, further strengthening the ties between Penn State and Tribhuvan University. Once again we feel these activities have moved PERL closer to its research, training, and institution building aims.

This report is a summary of the activities and accomplishments of the PERL during 1996, its second year of operation. We begin by presenting the research, training, and institution building aims which motivated these activities.

Research Aims:

1) To assess the influence of rapid changes in the ecological context on population processes, with a special emphasis on the processes of family formation, since these processes are a major determinant of population growth.

2) To assess the influence of changing demographic parameters, particularly related to population growth, on the ecological context.

Teaching Aims:

1) To train Nepalese applied social scientists in state-of-the-art social science research methods.

2) To train US social science students in research methods appropriate for developing country contexts.

Institutional Aims:

1) To create and institutionalize technical infrastructure for ongoing social science and demographic research in Nepal, including computing facilities and a survey research staff.

2) To develop a strong institutional link between IAAS and PRI that will be the basis for cooperative research projects and training of faculty and students at both sites.

RESEARCH

During 1996 the research activities of the PERL revolved around two large scale, long term research projects. The first of those is titled "Changing Social Contexts and Family Formation" which is referred to in the field as the "Chitwan Valley Family Study." The second project is titled "Reciprocal Relations between Population and Environment," and this project builds directly from the Chitwan Valley Family Study. The study area for both projects is the western part of the Chitwan valley in south central Nepal. It is surrounded by the Chitwan National Park (jungle) in the south, the Rapti River in the west, Nepal's East-West Highway in the east and the Narayani River in the north. While both projects are funded initially for five years, the Chitwan Valley Family Study began in late 1994 and the Population and Environment study started officially in September of 1995.

Chitwan Valley Family Study: This study is designed to investigate the influence of changing social contexts on the timing of marriage, childbearing and contraceptive use. The research is aimed at answering the following specific questions: (1) To what extent do changes in the community-level social and institutional context produce changes in family formation processes? (2) Do changes in the family organization of individual life courses transmit these contextual effects? (3) Do any direct effects of contextual change remain once important individual-level experiences are taken into account? and (4) Do the consequences of community-level changes depend on the cultural context? This study utilizes a combination of ethnographic and survey methods to gather neighborhood histories from 151 neighborhoods in Western Chitwan. The project will also gather personal histories from the approximately 5000 individuals between the ages of 15 and 59 years living in these neighborhoods.

The sample of neighborhoods for this study was chosen to represent the neighborhoods in Western Chitwan (equal probability), including the five major ethnic groups inhabiting the area. These ethnic groups include high caste Hindus, hill Tibeto-Burmese (such as Gurung, Tamang and Magar), indigenous terai Tibeto-Burmese (such as Tharu, Derai, and Kumal), Newar, and low caste Hindus. Considering the importance of dramatic social and economic changes in Narayanghat (the only city in the valley, on the edge of the study site), the sample was stratified by distance from this town.

By the end of 1995, PERL staff had completed the collection of neighborhood histories from all 151 neighborhoods in the sample. We had completed the collection of histories from all the schools, health facilities, transportation facilities, banks, development projects, temples, women's groups, agricultural cooperatives and other public facilities in the study area as well. Substantial effort was also devoted to designing and pre-testing our individual-level data collection instruments.

During the first half of 1996 we continued to refine the design of the individual-level questionnaire and a Life History Calendar for this project. Nearly two months were also devoted to training interviewers and interviewer supervisors. The individual data collection began in mid-July. By the end of December, PERL staff had collected 4515 individual interviews (4111 main sample and 404 spouse sample) while maintaining a response rate of approximately 97 percent. We expect the individual interviewing to be complete by the end of March, 1997.

PERL staff also successfully entered 3527 of these individual interviews into computerized form. Each questionnaire was checked for completeness and accuracy by three different supervisors before the data were entered. One hundred percent of the interviews were double entered and another twenty-five percent were physically checked against the original questionnaire. The final data were then transferred to Penn State, where they continue to be checked and cleaned. We hope to have file construction complete by the end of 1997 and to release these data to the public and begin our own analyzes in 1998.

Reciprocal Relations Between Population and Environment:
This study is designed to answer the following specific questions regarding the relationships between population change and environmental change: (1) To what extent do changes in marriage timing, household fission, childbearing and migration influence changes in land use, water quality and flora diversity? (2) To what extent do variations in land use, water quality and flora diversity produce changes in marriage timing, household fission, childbearing and migration? And (3) To what extent are the observed relationships between population processes and the environment produced by exogenous changes in the social and institutional context?

This study builds on the Chitwan Valley Family Study (CVFS) by utilizing the same study population and sampling frame. This feature allows the Population and Environment study to utilize data on socioeconomic change and demographic history collected in the CVFS. The Population and Environment study is designed to add several new components to this database. These include land use maps of the areas surrounding the neighborhoods, flora diversity counts from

Surrounding forests and pasture land, lab analyzes of water samples collected from the neighborhoods, a monthly update of demographic events (for three years), and a seasonal update of agricultural activities (also for three years).

By the end of 1995 PERL staff had completed much of the methodological work needed to obtain each of these new types of environmental data. This work included finalizing land use mapping procedures, selecting flora sample plots, testing laboratory procedures for water analyzes, and designing household-level agricultural questionnaires.

Environmental Measures. We conducted our baseline environmental data collection in the Spring of 1996. Mapping of land use patterns within neighborhoods began with the delineation of neighborhood boundaries. These boundaries were drawn so that each piece of land in Chitwan was assigned to a specific neighborhood giving it one, and only one chance of falling into our sample. We identified 18 mutually exclusive land uses within neighborhoods. These uses included cultivated land (upland, perennially irrigated land, and seasonally irrigated land), households (including associated property such as kitchen gardens), private businesses, plantations, orchards, common lands, and public infrastructure (such as canals, temples, and roadways). Within neighborhood boundaries we mapped each separate type of land use with tape measures and compasses. These measurements were then entered into a Geographic Information System (GIS) to calculate the land area associated with each use. The resulting data were then merged with the CVFS data.

We used 1992 aerial maps of Western Chitwan scaling 1:25,000 to select sites for flora counts from the Chitwan National Park area and other forested areas surrounding Chitwan. We selected a total of 127 plots, at various depths within the forest, from these forested areas. Dr. Dharma Raj Dongol (Botany, IAAS) trained a team of field workers in procedures for the identification and collection of flora species. With the cooperation and assistance of the Department of Parks and Wildlife and the Department of Forestry we visited each selected plot to take a detailed count of all flora species on the plot. We also selected an additional 138 plots from common land with Chitwan, surrounding our selected neighborhoods. Data on the number and type of species on each of the plots has been entered into

computerized form and samples of the flora species have been preserved in an herbarium at the IAAS. We are now engaged in collecting data on the exact latitude and longitude of each plot with the aid of Global Positioning System (GPS) technology. We expect this data collection activity to be complete in 1997.

We also selected drinking water samples from each of the neighborhoods included in our study. All of the neighborhoods in our study obtain drinking water from shallow wells. A team of IAAS researchers, led by Dr. Madhav Shrestha, analyzed the chemical content of samples of well water from each neighborhood. These analyzes included suspended solid particles, dissolved solids, specific conductivity, chemical oxygen demand, pH levels, inorganic nitrogen content, and phosphorous content. Water samples from a total of 199 wells were included in these analyzes. In addition, we collected a variety of information about the wells themselves, including the well depth, the well covering, and the nature of the area surrounding the well (cement, grass, presence of toilets, etc.). We also analyzed the chemical content of 86 water samples from irrigation systems serving our study area. Data from all of these water measures are in the process of being merged with our other data.

Each of these environmental quality measures will be repeated in early 2000.

Agricultural Measures. In 1995 we also began to design a baseline survey and a seasonal update of agricultural activities. The design and pretesting of these instruments was completed in the first half of 1996. These data collection instruments were designed to be administered at the household level. PERL staff trained fifteen interviewers and three supervisors to collect data using these instruments. Our collection of baseline agricultural and household data began in July. By December we had completed interviews at all 1582 households included in the neighborhoods sampled for our study. The high response rates we have experienced throughout our field work, 100 percent in this case, reflect the general cooperative nature of the Nepalese residing in Chitwan and the highly localized nature of our study design. The data from these interviews will be entered into computerized form during the early months of 1997. Our seasonal update of agricultural activities began in January of 1997 and is scheduled to continue through January 1999.

Registry of Demographic Events. In 1996 PERL staff also experimented with data collection instruments and procedures designed to collect monthly updates of demographic events from all those living in our sampled neighborhoods. These methods were finalized in early 1997 and data collection will begin from February of 1997. This data collection is designed to monitor births, deaths, marriages, divorces, household fissions, migration in, migration out, and contraceptive use among all those living in our study area from February 1997 through February 2000.

TRAINING

Several training activities were conducted during the year, including training mapping teams, survey research supervisors, interviewers, and data entry staff. The training staff included faculty and advanced graduate students from the Penn State University as well as PERL research staff. Below we provide a brief description of the training conducted during the year.

Training of mapping teams: PERL mapping teams were trained by Dr. Stephen Matthews (Geography, Penn State) on field mapping techniques and the use of Atlas GIS to calculate areas. Staff were trained to utilize a compass and large scale tape measures to record bearing points and to delineate land areas. Teams trained in these measurement techniques completed the land use measurements for PERL's population and environment project. PERL staff were also trained in the use of areal photograph maps and global positioning system (GPS) equipment to gather latitude and longitude coordinates. The staff trained in these methods have been, and continue to be, responsible for collecting the spatial location data required by PERL projects.

Training of survey research supervisors: Much of the first six months of 1996 was devoted to training ten PERL staff members as survey research supervisors. Each of these staff members had completed a college degree in the social sciences, or some related area, before joining PERL. The training was conducted through a series of lectures, practical field training exercises, and questionnaire pre-tests. Written training materials were based on the Survey Research Center of the University of Michigan's interviewer training and supervision

protocols. The training staff, Dr. William G. Axinn (Penn State), Dr. Ganesh P. Shivakoti (IAAS), Jennifer Barber (Penn State), and Dirgha Ghimire (PERL), studied survey research at the University of Michigan's Survey Research Center and the University of Chicago's NORC.

Training of survey research interviewers: Nearly six weeks in 1996 were devoted to training PERL's survey research interviewing staff. More than 970 applicants were screened for the position of interviewer and 80 went through General Interviewer Training. Our General Interviewer Training procedures were based on the University of Michigan's Survey Research Center's interviewer training course. We selected the top fifty trainees from those who completed the general training to continue on to study specific training. Trainees were divided between study specific training for the agricultural baseline survey (part of PERL's population and environment project) and study specific training for the life history survey (part of PERL's CVFS).

Training of data entry staff: PERL staff also designed and constructed data entry programs for computer entry of the data gathered through PERL survey interviewing. Jennifer Barber (Penn State) trained six data entry staff and two data entry supervisors. PERL staff also developed a system of quality control protocols for the data entry procedure, including double entry of 100% of the interview responses.

Other PERL Training Initiatives

Toward the long term academic development of PERL junior faculty associates and senior research staff, PERL continues to conduct training exercises aimed at improving staff scores on standardized exams such as the GRE and TOEFL. The main aim of these activities is to place PERL staff in social science degree programs outside Nepal. In January of 1996 Kishor Gajurel (PERL junior faculty associate) began the Ph.D. program in Rural Sociology and Demography at Penn State. During the Fall of 1996 Purandhar Dhital (PERL junior faculty associate) was admitted to the Ph.D. program in the Department of Agricultural and Extension Education with a Demography minor at Penn State. Mr. Dhital began his studies in January of 1997. These PERL staff members will return
to Nepal at the completion of their degree programs to continue their research careers at PERL.

Training exchanges between Penn State and PERL also continued in 1996. Jennifer Barber, an advanced Ph.D. student in Sociology at Penn State, spent three months during 1996 in Nepal engaged in training PERL staff, questionnaire design, and questionnaire pretesting. PERL provides a unique opportunity for Penn State Ph.D. students to become directly engaged, in a hands on way, in a large scale international research project. Barber's previous experience in Nepal, and intensive Nepalese language training, made it possible for her to both contribute to, and learn from, this involvement in the research process. Other Penn State students were involved in PERL research activities at the Penn State campus during 1996 in preparation for research experiences in Nepal during 1997.

INSTITUTION BUILDING

Institution building activities at the PERL have focused on developing research infrastructure at the IAAS in Nepal and forging stronger links between IAAS and PRI. In 1995 the development of PERL research infrastructure began with investment in two research support groups: (1) the Survey Research Support Group, and (2) the Computing Support Group. The PERL physical infrastructure are housed in two IAAS buildings, one for the survey research support group and a second for the computing support group. This second building also houses the living quarters for visiting PERL staff and students. PERL infrastructure development began with the acquisition of basic furnishings, including tables, chairs, desks, storage cabinets, bookshelves and filing cabinets. The development of these infrastructure has continued throughout 1996, including increasing the staff, enhancing the computing facilities, and improving the office environment.

Survey Research Support Group. In 1996 this PERL support group employed three IAAS faculty associates, two coordinators (one for each research project), two head supervisors, seven interviewer team supervisors, and forty-two interviewers. All of these staff received training in survey research and related research methods (described above). The staff is trained in the collection of household census data, household-level agricultural and economic data, individual life history

data (using a life history calendar), data on the attitudes, beliefs, and preferences of individuals, and various other types of household and individual data. The staff was engaged in a variety of survey research activities during the year, including questionnaire design, pre-testing of instruments, household-level data collection interviewing and individual-level data collection interviewing (also described above). PERL survey research procedures include an extremely high level of supervision, monitoring, and quality control. For example, each team of seven interviewers is accompanied by a supervisor at all times while in the field and each individual questionnaire is checked by at least three supervisors before it is released for coding. This staff now has extensive training and experience fielding multiple types of household and individual surveys. A central aim of the PERL institution building objectives is to maintain the availability of this staff for fielding new surveys in Nepal.

Computing Support Group. The PERL computing facility consists of six desktop computers, four laptop computers, and one ink jet printer along with a large array of supporting equipment. Due to the problems of severe heat and excessive moisture during the monsoon, and frequent power outages, the laboratory is furnished with an air conditioner, an electrical generator, two uninterrupted power supply sources, and several voltage stabilizers. Besides these facilities, the IAAS's Rural Resources Studies Program (PERL's parent institution) maintains a modest GIS laboratory with two 486 computers, one laser jet printer, one dot matrix printer, a 54 color combination printer, two hand held roving GPS devices, and a digitizing pad.
In 1995 these computing facilities were mainly used to develop new questionnaire materials for both neighborhood and individual-level data collection. As a result the PERL staff developed an expertise in both English and Nepalese word processing. Computer entry of neighborhood data also required the development of computer data entry skills. The staff also includes members with expertise in data management, particularly the use of spreadsheets.

During 1996, when full scale data entry began, we developed a core staff with strong data entry skills (training described above). By the end of 1996, this staff had entered data from more than 3500 individual interviews. These data were recorded on a 110 page questionnaire and a 59-year life history calendar; Thus, this data entry reflects the accomplishment of an immense task. The staff are highly skilled in editing, coding, data entry, double-entry, and data checking. During 1997 we expect to enter another 1500 individual interviews, 1800 household interviews, approximately 5000 seasonal agriculture update questionnaires, and approximately 3600 household registry forms. Thus this data entry staff is well practiced and PERL has the capacity to perform very large data entry operations.

Overall our goal is to create a data entry and computing resource designed to support continued, large scale, social science research projects in Nepal. Our investments in both equipment and staff training were designed to meet this aim. By 1997 we also expect to develop staff with strong data management and analysis skills. By 1998 we expect the PERL computing support group to be ready to serve new large scale social science research projects.

Other PERL Infrastructure. In addition to these research support groups, the nature of the lab's research and training agendas required the development of other support facilities. These include transportation, housing, and library facilities. PERL maintains two reconditioned vehicles, two motorcycles, two scooters, and more than 40 bicycles. This transportation infrastructure provides the means for staff to travel to field sites in order to complete data collection activities in a timely manner. The PERL also operates a small guest house with three guest rooms, a bathroom, and a kitchen. These facilities provide housing for PRI students studying at the PERL, as well as visiting PERL staff. Finally, PERL maintains a small library of study materials related to population, the environment, and social science research methods.

Exchange Visits. One of the keys to our strategy of developing stronger research and training links between the IAAS (Tribhuvan University, Nepal) and the PRI (Penn State University, USA) has been a series of exchange visits between IAAS and PRI. The visits were aimed at promoting stronger collaborative ties between IAAS and PRI and promoting new PERL related research or training initiatives. To meet this aim exchange visits were organized around ongoing PERL activities.

The following visitors and research collaborators visited PERL during 1996:

Dr. Kerry Richter, of the Population Research Institute, Penn State University spent 4 weeks in Nepal working on a variety of PERL research activities. That work included supervision of the environmental data collection activities and work on the design of seasonal agricultural and household registry data collection instruments. Dr. Richter also participated in an international conference, hosted by the IAAS, on the topic of population and natural resource management issues.

Dr. Stephen Matthews, of the Population Research Institute, Penn State University spent 2 weeks in Nepal engaged in PERL related research activities. His research work involved training staff for the collection of geographic data. These geographic data include the latitude and longitude locations of selected neighborhoods, selected flora plots, and all the schools, health posts, and bus routes in the study area.

Jennifer Barber, of the Population Research Institute, Penn State University spent 12 weeks in Nepal engaged in various PERL research and training activities. Her research work included designing and pre-testing individual-level survey questionnaires and household registry data collection instruments and procedures. Her training efforts involved training computing and data entry personnel for data entry of the individual-level questionnaire results and training supervisors and interviewers in methods of collecting individual-level interviews.

FINANCIAL SUPPORT

Financial support for PERL activities during 1996 came from a number of different sources. Below we provide a brief summary of those sources within categories of the activities they support. Without financial resource from these groups the PERL's accomplishments in 1996 would not have been possible.

Research Support. Financial support for PERL research projects came from the National Institute of Child Health and Human Development (NICHD) of the National Institutes of Health and the National Science Foundation (NSF) both of the USA. Specifically:

- The Chitwan Valley Family Study is funded by NICHD under a grant entitled "Changing Social Contexts and Family Formation" (grant # R01-HD32912), William G. Axinn, principal investigator.

- The Population and Environment Study in funded by NICHD under a grant entitled "Reciprocal Relations between Population and Environment" (grant # R01-HD33551), William G. Axinn, principal investigator.

- Additional support for these ongoing research activities comes from a grant from the NSF entitled "NSF Young Investigator Award" (grant # SES-9257724), William G. Axinn, principal investigator.

Training Support. Financial support for PERL training activities came from the Population Research Institute (PRI) of Penn State via institutional grants from the Andrew W. Mellon Foundation and William and Flora Hewlett Foundation, from various academic units at Penn State, and from the NSF. Specifically:

- Support for Penn State Ph.D. students (from the USA) participating in PERL training activities in Nepal came from the PRI's Andrew W. Mellon Foundation Grant entitled "International Demographic Research and Training for the 1990's" William G. Axinn, principal investigator.

- Support for Penn State Ph.D. students (from developing countries) participating in PERL training activities in Nepal and the USA came from the PRI's William and Flora Hewlett Foundation Grant entitled "International Population Training and Collaborative Research" Gordon DeJong, principal investigator.

- Tuition and stipend support for Penn State Ph.D. students participating in PERL training activities in Nepal came from Penn State University's College of Liberal Arts, Department of Sociology, and Department of Rural Sociology.

- Additional support for these ongoing training activities comes from matching funds generated by a grant from the NSF entitled "NSF Young Investigator Award" (grant # SES-9257724), William G. Axinn, principal investigator.

Institution Building Support. Financial support for PERL institution building activities, including both infrastructure development and travel for exchange visits, also came from PRI institutional grants from the Mellon foundation as well as matching funds from the NSF. Specifically:

- Support for PERL infrastructure development and exchange visits by Penn State staff (USA) to the PERL came from the PRI's Andrew W. Mellon Foundation grant "International Demographic Research and Training for the 1990's" William G. Axinn, principal investigator

- Support for exchange visits by Nepalese PERL staff to Penn State came from the PRI's William and Flora Hewlett Foundation Grant entitled "International Population Training and Collaborative Research" Gordon DeJong, principal investigator.

- Support for infrastructure development and exchange visit travel came from matching funds generated by a grant from the NSF entitled "NSF Young Investigator Award" (grant # SES-9257724), William G. Axinn, principal investigator.

1996 PERL PAPERS AND RESEARCH REPORTS

Although 1996 was only PERL's second year of operation, PERL staff completed several papers based on PERL research projects. They are listed below.

Axinn, William G., Jennifer Barber, and Dirgha J. Ghimire. Forthcoming. "The Neighborhood History Calendar: A Data Collection Method Designed for Dynamic Multilevel Modeling." Sociological Methodology.

Axinn, William G. and Ganesh P. Shivakoti. 1997. "Demographic Issues and the Use of Natural Resources" in Shivakoti et al. (eds.) People, Participation, and Sustainable Development: Understanding the Dynamics of Natural Resource Systems. (Proceedings of an International Conference held at the Institute of Agriculture and Animal Science, Rampur, Chitwan, Nepal, 17-21 March, 1996). Bloomington, Indiana and Rampur, Chitwan.

Axinn, William G., Lisa Pearce, and Dirgha J. Ghimire. 1997. "Innovations in Life History Calendar Applications." Poster presented at the 1997 Annual Meeting of the Population Association of America, Washington D.C.

Barber, Jennifer, William G. Axinn, Ganesh P. Shivakoti and Kishor Gajurel. Forthcoming. "Sampling Strategies for Less Developed Countries: A Detailed Example from Rural Nepal." Nepal Population Journal.

Matthews, Stephen A. 1996. "Methods of Incorporating Spatial and Temporal Effects in Research on the Interrelationships Between Population and Environment" in Shivakoti et al. (eds.) People, Participation, and Sustainable Development: Understanding the Dynamics of Natural Resource Systems. (Proceedings of an International Conference held at the Institute of Agriculture and Animal Science, Rampur, Chitwan, Nepal, 17-21 March, 1996). Bloomington, Indiana and Rampur, Chitwan.

Oladosu, Muyiwa. 1997. "The Role of Men in Household Decision Making, Reproduction and Family Planning: A Study of the Gurungs in Chitwan Nepal." Poster presented at the 1997 Annual Meetings of the Population Association of America, Washington D.C., March 27-29.

Richter, Kerry and Netra Chhetri. 1996. "Issues and Strategies for Understanding Population and Ecology Interlinkages in Western Chitwan" in Shivakoti et al. (eds.) People, Participation, and Sustainable Development: Understanding the Dynamics of Natural Resource Systems. (Proceedings of an International Conference held at the Institute of Agriculture and Animal Science, Rampur, Chitwan, Nepal, 17-21 March, 1996). Bloomington, Indiana and Rampur, Chitwan.

Shivakoti, Ganesh P., William G. Axinn, Prem Bhandari, and Netra B. Chhetri. 1997. "The Impact of Community Context on Land Use in an Agricultural Setting." Paper presented at the 1997 Annual Meeting of the Population Association of America, Washington, D.C.

The Institute of Agriculture and Animal Science

The Institute of Agriculture and Animal Science (IAAS) started as a School of Agriculture in 1957 under the Department of Agriculture of the Government of Nepal, and was elevated to the status of Institute of Agriculture and Animal Science, and became a part of the Tribhuvan University system. The central campus of the Institute is located at Rampur in the Chitwan district about 225 kilometers southwest of the capital city of Kathmandu. The mission of IAAS is to promote research and development in agriculture and to train students to support, implement and maintain agricultural development.

The academic programs at IAAS include a Bachelor of Science in Agriculture and a Bachelor of Veterinary Science and Animal Husbandry. The Institute also offers Master's degrees in Agronomy and Plant Breeding, Agricultural Economics, Animal Science, Horticulture, Entomology and Pathology. The programs are conducted through a total of thirteen departments and a core of 120 faculty.

The research activities of IAAS are coordinated through the Directorate of Research responsible for the formulation and execution of policies, and monitoring of faculty and student research. The faculty at IAAS have organized several research groups to take up interdisciplinary research and studies. Rural Resources Studies Program (R-RESP) is one of them and its mission is to continue the advancement of social science research and extension activities at IAAS in the areas of rural, natural and human resources. The two areas in which R-RESP is involved are: (1) Population and Ecology Research Laboratory (PERL) and (2) Rural Resource Information Laboratory (RRIL).

The Population Research Institute

The Population Research Institute provides an organizational setting for interdisciplinary population research and training. The Institute includes more than forty faculty associates and about fifty graduate students from eleven different departments in the social and agricultural sciences and in health-related fields.

Population training at Penn State includes both pre- and postdoctoral training programs. Predoctoral training is provided through a multi disciplinary dual-title graduate program in demography. This unique program allows students to earn a dual-title master's or doctoral degree in demography and one of the following fields: sociology, economics, anthropology, agricultural economics, rural sociology, or human development and family studies. The program enables students to develop expertise and skills in demographic theory, methodologies, and policy analysis while maintaining a professional identification with their social science disciplines. Support for Predoctoral students is provided by the Hewlett, Ford and Mellon Foundations, the National Institute on Aging (NIA), the National Science Foundation (NSF), and research and teaching assistantships in affiliated departments.

Postdoctoral training in the Population Research Institute is oriented toward refining demographic research skills through collaborative apprenticeships in research in population biology, intergenerational relations, and cohort succession in aging populations. This NIA funded training program supports four postdoctoral fellows each year. Postdoctoral training at the Institute also focuses on international demography, particularly fertility in developing countries and methods for combining qualitative and quantitative research strategies. This aspect of the training program is funded by the Mellon Foundation. Postdoctoral support also is available through the Mellon Foundation's fellowship program in anthropological demography, and PRI has hosted several postdocs in this area.

The Population Research Institute provides research support services and facilities to PRI associates and affiliates and pre-and postdoctoral trainees. Research support activities are provided in five main areas: administration, computer facilities and programming, statistical consulting, information access and retrieval, and geographic information analysis. These services are funded through a combination of Penn State support, core grants from the National Institute of Child Health and Human Development and National Institute on Aging, and private foundations such as Hewlett and Mellon. The PRI is the institutional home of the Center on Aging and Health in Rural America (CAHRA) and the Population and Ecology Research Laboratory (PERL).