



## A Quarterly Newsletter of Nepal Agricultural Research Council

Vol. 7 No. 1

January-March 2000

### Baldev Sharma: Hon'ble Minister for Agriculture Chairman to NARC Council



Mr. Baldev Sharma Majgaiya has been the Minister of State for Agriculture. The Hon'ble Minister for Agriculture is the Chairman of the NARC Council.

### NARC Day to be Observed

Ninth Annual Day of NARC is being observed with a special function on 7 May 2000 at Khumaltar. On the occasion NARC employees having completed 25 years service in agriculture field will be recognized with honour plaques. NARC as an autonomous organization was established in 1991 (Baisakh 25, 2048 B.S.)

Visit NARC Website at:  
[www.narc-nepal.org](http://www.narc-nepal.org)

### NARC-NGOs Consultative Meeting

With a view of enhancing participation of NGOs and Private sectors in National Agricultural Research System, NARC organized the first Consultative Meeting with NGO/INGOs and Private organizations on 5 Feb., 2000 at Khumaltar.

As outlined by the Executive Director of NARC, Dhruva Joshy while welcoming all the representatives at the meeting, the consultative meeting was for the exchange of information and ideas and working out forward together for developing linkages between NARC and NGOs. The purpose of the interactive consultation was to help NARC formulate its future strategies with respect to NARC/NGO linkages and the ways the NGOs can help NARC in addressing research and development goals.

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### National Summer Crops Research Workshop

The 22<sup>nd</sup> National Summer Crops Research Workshop organized by NARC was held at Agricultural Research Station, Lumle from 27-29 March 2000.

The three-day workshop was held with the objectives to review the research activities on summer crops in the past some years and their outcomes; discuss existing problems; and recommend technologies for release.

The workshop was participated by scientists/researchers from National Commodity Research Programs, Regional Agricultural Research Stations, Disciplinary Divisions of NARC; District Agriculture Development Offices of Department of Agriculture; NGOs, and Donor agencies. In the workshop, working papers about the researches on various summer crops: rice, maize, finger millet, buckwheat, oilseed crops, grain

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**Season's Greetings  
&  
Best Wishes  
on  
The New Year  
2057**

#### ISSUE HIGHLIGHTS

- NARC-NGOs Consultative meeting
- National Summer Crops Research Workshop
- Meeting of Review Panels for NARC Research Programs
- World Bank Mid-term Review Mission
- Training on GIS & Workshop on Nepal Country ALMANAC
- Indian Scientists to NARC
- Farmers' Field Day

## Meetings of Review Panels on Research Programs

Following the Regional Level Workshops on Program Planning and Budget for the next fiscal year 2000/2001 (2057/58) held at Regional Agricultural Research Stations, Nepalgunj and Tarahara during 6-14 January 2000, the Technical Review Panels met at NARC, Khumaltar on Jan. 31- Feb 2, 2000.

The meetings of fourteen different technical review panels were held to see whether the research proposals were scientifically sound and budget proposed were justified, whether the proposals were made in line with the NARC Guidelines and Directives, whether they are justifiable with farmers problems and national needs. The panels had the authority to accept or reject research proposals in consideration of the NARC Guidelines and Directives, technically soundness and national importance, duplication of research projects etc. The panels after reviewing through the projects proposals presented reports to NARC for further processing.

The fourteen different technical review panels were on: Plant Breeding and Seed Production; Agronomy; Agri-Engineering; Irrigation Management and Post Harvest; Soil Science; Entomology; Pathology; Horticulture; Outreach Research and Communications; Animal Nutrition; Livestock Product Processing; Animal Health; Pasture and Fodder; Animal Breeding and Genetic resources

In addition to the regular research programs, various new research programs have been proposed for the next year. The new areas of research proposed are: natural resource management, use of effective microorganism (EM), agro-climate, modeling and simulation, integrated post harvest technology, environmental effect, off-season vegetables production, hybrid rice (by NARC and IAAS jointly), large-scale seed multiplication, gender issues etc. Similarly different research programs are proposed in livestock & fisheries i.e. animal nutrition package, fish production in farmers pond, use of herbicide against animal disease, measures to overcome cow sterility and degnala disease problem, agro-forestry, development of eco-park with indigenous domestic animals etc.

## World Bank/AREP Mid-term Review Mission

The World Bank mission for mid-term review of Agriculture Research and Extension Project (AREP) was in Nepal from 7-24 February 2000. The team had observation visits to different sites under the ARE Project. During the mission the team had interactions with concerned bodies implementing the Project. The team had also meetings with NARC Officials implementing the research component of the project.

Following the review, a time-bound indicators of implementation of AREP Research Component has been devised. The Indicators has different three sub-components, namely, Modernizing NARC; Strengthening regional agricultural research and linkages with farmers and extension; and Toward a national agricultural and Natural resource policy and fund. Major objective of the first component is to

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The meeting was participated by representatives from NARC, Ministry of Agriculture, Department of Agriculture, and Department of Livestock Services, Agriculture Research and Extension Project (AREP), World Bank, Institute of Agriculture and Animal Science (IAAS), CIMMYT, ICIMOD, HARP and different NGOs and INGOs in Nepal.

Major issues identified for partnership by the meeting were:

- Identify and prioritize NARC research areas for effective partnership with (I)NGOs
- Identification of relevant (I)NGOs and Private sector by NARC for partnership
- Develop modalities for partnership between NARC and (I)NGOs/Private sectors
- Allocate resources (fund) lumpsum by NARC for contract/partnership project
- Establish an NGO Cell within NARC and develop profile of (I)NGOs
- Develop NGO networks for decentralized testing/verification of technologies

Following the meeting, the NARC senior management reviewed the Meeting's issues and, at this stage, decided to:

- Designate an NGO Liason office
- Welcome, at this stage, project proposals for partnership/contract research from NGOs
- Advertise more forwardly next year for

develop NARC as an efficient provider of agricultural research services in Nepal through improved management and human resources, of the second is to strengthen regional agricultural research stations to complement commodity programs and meet demands for a more diversified and knowledge intensive agriculture through research on crop, soil and water management, horticulture, livestock and cropping and farming system; of the third is to develop a national agricultural research policy which would be the framework for developing a strategy for the NARC and for a National Agricultural Research and Development Fund (NARDF).

The Indicators has a list of specific activities with baseline indicator at 02/2000 and output indicators at 09/2000, 03/2001 and at the project completion (2002).

research projects from NGOs/Private sectors

- Convene another workshop in early summer
- Request NGOs who wanted to be registered with NARC to send completed forms to the NGO Liason Office

### Brief News

#### Dhami Expired

Mr. Ram Lakhan Dhami, the then Director General of Department of Agriculture expired on 30<sup>th</sup> January 2000.

#### Farmers' Visit

Farmers' group visit from Rolpa to NARC organized by Rolpa District Agriculture Office was held on 8<sup>th</sup> March 2000. Thirty men and women farmers had participated the visit. Similarly, farmers' group of forty from Sindhuli was led a visit to NARC earlier in the month..

#### SARC-2000 Held at New Delhi

The First South Asia Rice Conference-2000 (SARC-2000) was held in New Delhi from 16-17 March 2000. Mr. Bholu Man Singh Basnet, Senior Scientist from NARC participated the Conference.

#### Field Monitoring Visit

A field monitoring visit was undertaken by the staff from Communication, Publication and Documentation Division (CPDD) on 4-14 March 2000. Mr. B M S Basnet, Sr. Scientist and Chief of the CPDD and M.Thakur, Technical Officer visited various on-station and on-farm research sites at Parawanipur, Ranighat and Rampur. During the visit video shooting of the demonstration of wheat and maize technologies, use of different machinery and equipment were taken for publicizing them.

legumes and jute were presented and discussions on different issues were held followed by group presentation about the recommendations on technologies for release, pipeline technologies, and some system and management issues.

The workshop after deliberate discussion in two different groups, made out the following recommendations.



## Recommendations:

### RICE

#### Varieties to be released

- NR 10276-9-3-3-3-2: For mid-hill (3000-5000 feet) medium fertility condition, grain yield potential- 8.2 t/ha, straw yield – 10.4 t/ha, maturity – 143 days, Blast disease resistant
- NR 10285-29-3-1 : For mid-hill (3000-5000 feet) medium fertility condition, grain yield potential – 8.3 t/ha, straw – 11.5 t/ha, maturity – 143 days, moderately resistant to blast disease.
- NR 10286-3-2-2 : For mid-hill, medium fertility condition, grain yield- 8.4 t/ha, straw-10.9 t/ha, maturity 143 days, resistant to blast disease
- NR 10291-6-1 : For Kathmandu valley, high fertility condition, grain yield - 10.1, straw-6.0, maturity – 141 days, moderately resistant to blast disease
- NR 10275-14-2: For Kathmandu valley, high fertility condition, grain yield – 8.6 t/ha, straw – 6.4 t/ha, maturity – 139 days, resistant to blast disease
- Jhingling – 78 : For Jumla valley (high altitude), grain yield – 5.97 t/ha, straw 7.3 t/ha, maturity – 127 days, moderately resistant to blast disease
- Yungen – 1 : For Jumla valley, grain yield – 5.7 t/ha, straw- 8.3 t/ha, maturity- 127 days, moderately resistant to blast disease
- NR 10293-0155-0159-8: For Jumla valley, grain yield – 4.7 t/ha, straw – 9.4 t/ha, maturity – 122 days, moderately resistant to blast disease



- Jumli White : For Jumla valley, grain yield 4.3 t/ha, straw 9.0, maturity 125 days, moderately resistant to blast disease.
- BG 1442: Chaite rice under Rice-Vegetable pattern, resistant to leaf blast
- Radha 32 : Early Chaite rice suitable for rainfed low land as well as upland condition of mid & western terai under Rice-Wheat system
- BPI 3-2: Main season rice for irrigated as well as rainfed low land, resistant to leaf blast.

#### Pipeline Varieties

- NR 1487 : Early duration, main season rice for rainfed lowland
- NR 1488 : Early duration, main season rice for rainfed lowland
- BG 301: Early duration, main season rice for rainfed lowland for western terai
- C 2764-10-2: Early duration, main season rice for rainfed lowland for western terai
- NR 601-1-1-9: Main season rice for rainfed low land, medium duration
- NR 601-1-1-5: Main season rice for rainfed low land, medium duration
- BW 306-2: Main season rice for rainfed low land, medium duration
- BR 802-78-2-: Main season rice for irrigated condition
- NR 1562–1-1-1-2-12: Main season rice for irrigated condition
- NR 1249-12-4-2-2-1-1: Early main season rice for irrigated condition
- IR 13155: Early main season rice for irrigated condition
- CNTR 85033-9-1-1: Main season rice (fine and aromatic)
- Pusa 834: Main season rice (fine and aromatic)
- IR565610-105-2-5-2-2-2: Main season rice (fine and aromatic)
- Lumle – 2 : For high hill (>1500 masl), grain yield 3.77t/ha, maturity 164 days
- Lumle 5-1: For high hill, grain yield 3.60 t/ha, maturity 162 days

LR 91006-OL-OL-55:	For high hill, grain yield 4.32 t/ha, maturity 162 days
NR 10315-2-3-2-1:	For mid-hill (850-1500 masl), grain yield 7.23 t/ha, maturity 144 days
NR 10290-15-2-3-1:	For mid-hill, grain yield 3.86 t/ha maturity 140 days
NR 10315-158-3-2-1:	For mid-hill, grain yield 4.65 t/ha maturity 139 days
NR 1190-24-2-3:	For river basin, grain yield 5.1 t/ha, maturity 147 days
MLT 119:	For river basin, grain yield 4.9 t/ha, maturity 130 days
OR 363:	Irrigated, normal, grain yield 5.09 t/ha, maturity 130 days
BPI 3-2:	Irrigated, normal, grain yield 5.09 t/ha, maturity 130 days
NR 1487:	Rainfed, grain yield 5.09 t/ha, maturity 135 days
IR 57298:	Rainfed, grain yield 4.3 t/ha, maturity 124 days
NR 1249:	Chaite rice, grain yield 3.97 t/ha, maturity 120 days
IR 59606:	Chaite rice, grain yield 3.23 t/ha, maturity 116 days
Kasturi:	Fine and aromatic rice for hill, grain yield 2.99 t/ha, maturity 134 days
IR 65610-105:	Fine and aromatic rice for hill, grain yield 2.79 t/ha, maturity 140 days

### ***T echnique for breaking dormancy in terai rice varieties***

- Pre-dry seeds at 50<sup>o</sup> C for 7 days for chaite-2 variety
- Pre-dry seeds at 50<sup>o</sup> C for 5 days for Ghaiya-2 variety
- Pre-dry seeds at 50<sup>o</sup> C for 5 days followed by pre-soak seeds in water at room temperature for 48 hours for Chaite-4, Radha-4, Radha-11 and Radha-12 varieties

### ***Food research results***

NR 10375-16-1-2:	Extra heavy, low husk content, higher milling recovery, low broken, bold type and intermediate amylose content
NR 10375-14-2-1:	Extra heavy, low husk content, higher milling recovery, low broken, bold type and intermediate amylose content
NR 10276-35-2-3-1:	Higher amylose contents (nearly 25%)
NR 10239:	Higher amylose contents (nearly 25%)

### ***Other recommended technologies***

- Seedling broadcasting + use of manual rice weeder for labor saving under puddled condition without standing water
- Use of 6-row manual rice transplanter for irrigated flat land
- In Rice-Wheat system, application of 50:15:15 NPK kg/ha for rice and 80:15:15 NPK kg/ha for wheat through inorganic sources or combination of organic & inorganic sources for sustainable yield and maintaining soil fertility in river basin & low hill of western hills
- In upland rice-blackgram system, 40:15:15 NPK kg/ha through inorganic sources or organic or combination of both to sustain grain yield and maintain soil fertility in Tar areas of western hills.
- 90:40:30 kg N;P<sub>2</sub>O<sub>5</sub>;K<sub>2</sub>O/ha – optimum for Sabitri & Rampur Mansuli under irrigated condition in central terai
- Leaf color chart based N- management can increase N use efficiency
- Simple mechanical rice dryer for early rice

## MAIZE

### ***Technologies/Varieties to be released***

Makwanpur-2:	Grain yield 5.0 t/ha, yellow grain colour full season
Arun-4:	Grain yield 3.3 t/ha, yellow grain colour early
Population –22:	Grain yield 5.7 t/ha, white grain colour full season
BA-93:	Grain yield 5.0 t/ha, white grain colour full season

### ***Pipeline technologies/Varieties***

Pool-21:	Grain yield 5.3 t/ha, yield grain colour, full season
Narayani:	Grain yield 5.5 t/ha, yellow grain colour, full season
Hill pool white:	Grain yield 5.5-6.0 t/ha, white grain colour, full season
Hill pool yellow:	Grain yield 5.5-6.0 t/ha, yellow grain colour, full season
Thaltizapan 8644:	Grain yield 5.1 t/ha, white grain colour, full season

### ***Promising Maize genotypes:***

Uphar:	full season yellow
Evs from Population 42 and 44:	full season yellow
Thaltizapan 9542:	Ear rot resistant (seed treatment) with Benlate 2 g/kg for ear rot)

## Maize Hybrids:

LAPOSTA X TS6CL, AC982 XCML 298  
CML 247 X CML 254, CML 264 X CML 23

## Other technologies recommended

- Rampur Composite produces the highest edible baby corn shoots (1,002 kg/ha) with 200 kg N/ha, plant density 1,1,1000 plants/ha
- Hybrid Maize - Pioneer 3400 the produces 8.2 t/ha Vs. Rampur Composite (5.8 t/ha) in Bara District
- Arun 2: Density 71,000; 90 kg N/ha, spacing 70 X 20 cms.
- Acorus (Bojho) powder @ 30 gm/kg maize grain reduces weevil infestation from 98 to 10% in the eastern mid and low hills
- Animal drawn maize planter in flat land
- In Maize-Finger millet and Maize/Finger millet system of cropping in mid hills, Maize variety - Pop 22 and Finger millet variety – GE0013
- Incorporation of maize/mustard stubbles along with recommended fertilizer under rainfed upland condition
- In Maize/Millet and Maize-Millet system of mid hills- FYM 15 t/ha + NPK 45:35:20 kg/ha for sustainable soil fertility and productivity
- Application of 120 kg N/ha through organic sources alone is necessary for sustainable yield in maize millet system in the acidic soil of high rain fall areas of western hills
- In Khumal condition, for Rice and Maize based system, Rice or Maize-Cauliflower gave the highest economic return over other systems
- Potentials and constraints to maize cultivation of the maize based cropping system in the mid and far- western hills of Nepal have been identified.

## GRAIN LEGUMES

### Technologies/Varieties to be released

#### Cowpea

IT 86D-792: Yield potential 2090 kg/ha, Average yield 1224 kg/ha, Average plant height 62.9 cm, days to flowering 47 days, seed weight 16.87 gm, suitable for both seed as well as vegetable due to tender pod.

#### Pigeonpea

Pusa-9: Yield potential 3200 kg/ha, Average yield 2350 kg/ha, suitable for early rice-Pigeonpea and Maize-Pigeonpea cropping pattern

Pusa 14: Yield potential 3400 kg/ha, Average yield 1699 kg/ha, suitable for early rice Pigeonpea and Maize - Pigeonpea cropping pattern

#### Soybean

PK 327: Yield Potential - 3000 kg/ha, Average yield - 8872 kg/ha, Maturity-134 days, suitable for inter cropping (1645 kg/ha)

PK416: Yield potential - 3400 kg/ha, Average yield - 2872 kg/ha, Maturity - 128 days, suitable for inter cropping (1645 kg/ha)

Hauichin 2: Yield potential-13.6 t/ha, Avg. yield-11.49 t/ha, Maturity - 128 days, suitable for vegetable

Suidachung: Yield potential - 11.46 t/ha, Average yield - 10.59 t/ha, Maturity - 121 days, suitable for vegetable

### Pipeline technologies/varieties

#### Cowpea

IT82D-787: Yield potential - 2102 kg/ha, Average yield - 1242 kg/ha, Flowering 48.7 days, Seed weight 14.09

IT 82D-2087: Yield potential - 2000 kg/ha, Average yield - 1149 kg/ha, Flowering - 51.4 days, Seed weight - 13.49 gm

#### Pigeonpea

ICP 7035: Yield potential - 2587 kg/ha, Average yield - 2098 kg/ha, Maturity - 281 Days Seed weight - 21.1 gm, resistant to SM+Wilt

#### Soybean

ARS 87-1: Yield potential - 3200 kg/ha, Average yield - 2648 kg/ha, Maturity - 125 days

F-778817: Yield potential - 3000 kg/ha, Average yield - 2383 kg/ha, Maturity - 127 days

### Other technologies recommended

- Nimicide@0.75ml/litre + Thiodan 35 EC @0.75 ml/lit. for pigeonpea pod borer and pod-fly control

## OIL SEEDS

### Technologies/varieties to be released

#### Groundnut

M-13: Yield potential - 2.5 t/ha (25% higher than check Jyoti) suitable for all groundnut growing areas

ICGV 86125: Early, yield potential - 2.0 t/ha, Maturity - 110-115 days, suitable for double cropping system

#### Sesame

DN-4: Yield potential - 600 kg/ha, Maturity - 80 days, suitable for double cropping system

#### Niger

ACC#5355: Yield potential - 600 kg/ha, suitable for terai and inner terai

### Pipeline technologies/varieties

#### Groundnut

ICGV-9160: Yield potential 2.0 t/ha, maturity 130-135 days (Normal)

ICGV-91004: Yield potential 2.0 t/ha, maturity 130-135 days (normal)

ICGV-90173: Yield potential 1.5 t/ha, Early maturity

ICGV-91058: Yield potential 1.5 t/ha, Early maturity

#### Sesame

Acc#6858: White, yield potential - 500 kg/ha, short maturity period (80-95 days)

CH-2: Black, Yield potential - 500 kg/ha, short maturity period (80-95 days)

## Sunflower

HybridPAC-36: Yield potential 2 t/ha

PAC-302: Yield potential 2 t/ha

### Other technologies recommended

- Spray of carbendazin @ 0.1% at 45, 60, and 75 days after seeding-effective and economic for control of leaf spot disease
- Spring season planting for sunflower
- For spring season sunflower and groundnut-planting at 1:3 ratio

## HILL CROPS

### Technologies/Varieties to be released

#### Finger millet

GE5016: For relay cropping, tolerant to FB and lodging

GE0122: For relay cropping, tolerant to FB and lodging

ACC#2653-1: Mono cropping, mid-hills

### Pipeline technologies/varieties

#### Finger millet

GE0001: for relay cropping, mid-hills

GE0124: for relay cropping, mid-hills

GE5175: for relay cropping, mid-hills

#### Buckwheat

GF5283: sweet

IR 13: sweet

## JUTE

### Pipeline technologies/varieties

#### Jute (*C.capsularis*)

China-1: Yield 1.1 – 1.6 t/ha, maturity-120-130 days

Solimoas: Yield 1.1 – 1.6 t/ha, maturity-120-130 days

#### Jute (*C.olitorius*)

Y/022: Yield 3.4 – 3.7 t/ha, maturity-120-135 days

Non-SONG-1: Yield 3.4 – 3.7 t/ha, maturity-120-135 days

### Recommendation on Research Management System

- Information on Acceptance or rejection of project proposals be reverted back in time to the concerned Commodity Program/Division/RARS/ARS
- Project Leader be authorized to spend some of project money
- A provision of reward for best paper of the workshop/seminar be made
- Monitoring and evaluation be regularly done and a provision of reward for best researcher and research station be made
- Research proposals be developed based on the priority problems of Village Level Workshops and RTWG meetings

- Scientists/researchers should get incentives i.e. timely promotions, upgraded salary, opportunity of training, seminar, higher studies etc.
- Technology recommendation must be done by technical groups of concerned National Workshop (Summer crops, Winter crops, Horticulture, Outreach, Livestock and Fisheries and Veterinary research etc.) with general consensus.
- More research program in crop management aspects (including agriculture engineering) should come rather than the variatal research at present.
- Coordination, collaboration & linkage within NARC stations, divisions, line agencies & concerned private agencies should be strengthened for technology testing and adoption process.
- Minimum required physical facilities be provided to the ARSs which are funded by HMG budget.
- Seed money be made available to Agriculture Engineering Division/ Agriculture Implement Research Centre (AED/AIRC) for multiplication of suitable tools & implements.
- Farmers participatory research should be encouraged for effective & quick output with extensionists
- Multidisciplinary and system based research projects should be encouraged
- Reasons of ineffective extension should be identified
- NARC should prioritize competitive bidding research areas
- Terms and conditions for competitive bedding projects should be transparent irrespective of scientists/ stations/agencies/ divisions (NARC)
- Researchers/institutions should be proactive and good in salesmanship
- Communication, Publication and Documentation unit at every RARS be established
- Recommendations of all workshop must be published regularly
- Proceedings should be published within 6 months
- NARC should strictly implement recommendations of workshop

## Indian Scientists to NARC

Under the two-year work-plan signed between Nepal Agricultural Research Council (NARC) and Indian Council of Agriculture Research (ICAR) in September 1998, Indian Scientists in different subjects had study visits to NARC during the months of January-March, 2000. The Scientists from ICAR observed the related research activities under NARC and interactions between NARC and ICAR Scientists were held.

The Visiting Scientists from ICAR were: Dr.N.P. Malkanaia, Project Coordinator (Forage crops) Indian Grass and forage research institute, Jhansi; Dr. C.S. Singh - Use of Bio-fertilizers, Azotobacter Mycorrhiza culture and other sloppy land management; Dr. N.S.L. Shrivastava - Zero Tillage technology in wheat production; Dr. S.K. Tandon, Zero Tillage technology in wheat production; Dr. J.C. Rana, Collection and in-situ conservation of Agricultural Bio-technology; Dr. K.C. Bhatta, Collection and in-situ conservation of Agricultural Bio-technology; Dr. Mathurai Rai, Horticulture Research; Dr. M.K. Banarji, Horticulture Research

# TRAINING WORKSHOP/SEMINARS, STUDY & TOURS

(January - March 1999)

S.N	Name	Position/Faculty	Subject	Duration	Country
<b><u>SEMINAR/WORKSHOP</u></b>					
1.	Mr. Dhruva Joshy	Executive Director	Regional Steering Committee Meeting	7-8 March	Pakistan
2.	Mr. Dularchan Sahu Pathik	Director, Crop/Hort.	Regional Steering Committee Meeting	7-8 March	Pakistan
3.	Mr. Shambhu Lal Shrestha	S-4/Agron.	Workshop on Co2	8-20 Feb.	Bangladesh
4.	Dr. Kishor Kumar Sherchand	S-3/Agron.	Workshop on Co2	8-20 Feb.	Bangladesh
5.	Dr. Rama Bhurtel	S-3/Livestock	Regional Seminar on Health, Power and Rights from Gender Perspectivesr	15-23 Feb.	Thailand
6.	Mr. Durga Nanda Chaudhary	S-4/Jute	Jute Workshop cum Final Coordination Meeting	20-24 March	Indonesia
7.	Mr. Surya Prasad Shrestha	S-3/Jute	Jute Workshop cum Final Coordination Meeting	20-24 March	Indonesia
8.	Mrs. Dayamani Devi Gautam	T-6/Jute	Jute Workshop cum Final Coordination Meeting	20-24 March	Indonesia
9.	Mr. Shambhu Prasad Khatiwada	S-3/Agron.	Synposium on in-situ Conservation of Genetic Resources	21-23 March	Vietnam
10.	Mr. Khadga Bhakta Paudel	S-3/Agron.	ADB Project on Tropical Fruit Species	15-18 Feb.	Malayasia
11.	Mr. Dhruva Joshy	Executive Director	IBSRAM Meeting	29-31 March	Thailand
<b><u>OBSERVATION TOUR</u></b>					
12.	Mr. Buddhi Prakash Sharma	S-3/Ginger	Observation Tour on Ginger Research	24-30 Jan.	India
13.	Mr. Gautam Buddha Manandhar	S-3/Engg	Observation Tour on Ginger Research	24-30 Jan.	Indias
14.	Mr. Ramesh Chandra Bhandary	S-3/Food Tech.	Observation Tour on Ginger Research	24-30 Jan.	India
15.	Mr. Ram Chandra Munakami	S-3/Agron.	Observation Tour to Sikkim	8-19 March	India
16.	Dr. Bhav Prasad Tripathi	S-3/Soil	Observation Tour to Sikkim	8-19 March	India
17.	Dr. Ash Kumar Rai	S-4/Fish.	Observation Tour to Thailand	27 March-2 months	Thailand
<b><u>TRAINING</u></b>					
18.	Ms. Jinu Shrestha	T-5/Overseer	Training on Procurement Procedure	24 Jan.-2 Feb.	India
19.	Dr. Bhoj Raj Joshy	S-3/Vetr.	Molecular Aspect (Visiting Scientist)	15 Jan.-15 Feb.	Australia
20.	Mr. Hem Singh Bhandari	S-3/Plan Breeding	Training in DNA Marker Technologies	4 Jan. - 4 months	Philippines
21.	Dr. Dhruva Bahadur Thapa	S-2/Agron.	International Course on Plant Genetic Resources Conservation and Management	24 Jan.-22 Feb.	Srilanka
22.	Mr. Suresh Singh Maharjan	T-5/Mech.	Motor cycle Repair Training	14-18 Feb.	India
23.	Mr. Yogendra Prasad Dhanuk	T-6/Mech.	Motor cycle Repair Training	14-18 Feb.	India
24.	Dr. Kiran Raj Joshy	S-3/Agron.	Maize Crop Management Research Training	14 Feb.- 11 Aug.	Kenya
25.	Mr. Ram Bahadur Katuwal	T-6/Agron.	Maize Crop Management Research Training	14 Feb.- 11 Aug.	Kenya
26.	Ms. Samjhana Karki	T-5/Overseer	Diploma Course in Geoinformatics (GFMY) Course	8 Feb. - months.	Netherlands
27.	Mr. Kulananda Mishra	T-5	Laboratory Training	March 14-12 April	India
28.	Ms. Jagat Devi Ranjit	S-3/Agron.	Regional Course on Weed Ecology	20-28 March	
29.	Ms. Sarala Shama	S-3/Patho.	CABI Training on Root Pathology on Wheat and Soil Health	27 March-7 April	Pakistan
<b><u>STUDY</u></b>					
29.	Mr. Sahabuddin Khan	S-3/Agron.	M.Sc.Ag. (Agronomy)	3 Jan.- 2 Jan. 2002	India
30.	Mr. Him Prasad Pathak	S-3/Ento.	M.Sc.Ag. (Entomology)	3 Jan.- 2 Jan. 2002	India
31.	Mr. Yugnath Ghimire	S-3/Agron.	M.Sc.Ag. (Agri-Economics)	3 Jan.- 2 Jan. 2002	India
32.	Mr. Ananta Prasad Regmi	S-3/Soil	Ph.D. (Soil Science)	3 Jan.- 2 Jan. 2002	Philippines
33.	Ms. Shree Baba Pradhan	S-3/Ento.	Ph.D. (Soil Science)	3 Jan.- 2 Jan. 2002	India

## Programs on GIS

### GIS Training

A training program on GIS (Geographical Information System) was conducted by CIMMYT (International Maize and wheat Improvement Center), Nepal at NARC, Khumaltar from 29 Feb to 2 March, 2000.

The training with twenty six participants from NARC was held to give knowledge about the Nepal Country ALMANAC and methods of handling it.

### Workshop on the use of the Nepal Country ALMANAC

A workshop on the "stand-alone geographical information system (GIS) tool – the Nepal Country ALMANAC" was jointly organized by CIMMYT and NARC on 2 March 2000 following the training program on the same.

The workshop was attended by the then Minister for Agriculture Mr. C.P. Bastola who showed keen interest on the information system. At the workshop also present were Executive Director, Directors, Divisions Chiefs, Scientists of NARC and CIMMYT officials.

The participants of the workshop received a beta release of the ALMANAC that currently includes data for Nepal (Largely at district level), Rupandehi district (1:25,000 scale) as an example of potential use of high resolution data, and selected maps that relate climates at locations in Nepal to other regions globally. The ALMANAC is produced through a collaborative project with Texas A & M University's Blackland Research Centre and the Hill Maize Research Project in Nepal.

The ALMANAC is claimed to provide users with a wealth of spatial data plus powerful spatial characterization tools packaged together in a user friendly format. It makes GIS technology readily accessible to non-GIS experts and is targeted towards researchers in the field of agriculture, natural resource management, health, disaster mitigation, as well as decision makers and

policy makers. In the field of agriculture this may be useful for:

**Characterization-** Understand how regions (or sites) of interest are characterized in terms of climate, elevation and other parameters

**Targeting-** Whether, for example, new crops or agronomic or agronomic practices are appropriate in specific regions

**Possible impact-** promising technologies, new diseases or pest

## Farmer's Field Day

A Farmer's Field Day was organized by Agricultural Implements Research Centre of NARC at Ranighat, Birgunj on 5 March 2000.

In the Program, about fifty farmers (men and women) participants from Bara and Parsa districts were led to the field visit of different research sites at Telkuha, Pipradi and Rauwahi Village Development Committees in Parsa. The farmers were exhibited impacts of Zero/No tillage, Minimum tillage, Surface seeding and Relay seeding technologies of wheat. They were also demonstrated the use of equipment like Chinese Hand Tractor attached with Seed Drills, Pantanagar Seed Drills, Seeding behind the plough, Furrow Irrigated Raised Bed (FIRB) System.

Surface Seeding technology of wheat has helped the farmers for intensive farming in the areas by reducing turn-around-time.

The farmers have been very much encouraged to cultivate more lands that usually remain fallow during winter.

The technologies exhibited there were video documented by Communication, Publication and Documentation Division of NARC for wider publicity through Nepal Television.

of such training. Mr. Shrikrishna Adhikari, Chief of Agri-Engineering Division, NARC welcomed the participants in the training and highlighted the objectives of the training.

## Training on Farm Machinery

A training program on "Handling and Maintenance of Farm Machinery and Agricultural Equipment" was conducted at Regional Agricultural Research Station, Bhairahawa by Agri-Engineering Division of NARC from 5 -10 March 2000.

The week long training program was participated by farmers from different villages who were given practical knowledge on various farm machinery and equipment, their use and maintenance.

### TALKPROGRAMSHELDATNARC

"Wheat Sterility Research in Bangladesh" by Dr. Saiffuz Amman on March 21, 2000

"Legume Rhizobium Studies in SE Australia" by Dr. Jo Slattery, Victoria, Australia on 20 March, 2000

"Horticulture Research and Development in Nepal & India" by Dr. Mathurai Rai, Principal Scientist and Head, Indian Institute of Horticulture Research, Jhansi (ICAR), India 3 March 2000.

"Beneficial Micro-organism and Plant Health Improvement" by Dr. S.C. Singh, Visiting Scientist, Indian Agriculture Research Institute on 3 March 2000

"Carbondioxide Enrichment Technology & Crop Growth" by Prof. Dr. Bruce A. Kimball, Environmental Scientist, United States Department of Agriculture (USDA), USA on 24 February 2000

"Evolution of National Agricultural Research Systems: Emerging Lessons" by Dr. Derek Byerlee, Principal Economist and Agricultural Research Specialist, Rural Development, World Bank, Washington D.C. on 21 Feb 2000.

"Asking Gender Questions in Agricultural Research" by Dr. Christine Okali, AREP Gender Consultant (ODG/Dev University of East Angela, Norwich, U.K.) on 21 January 2000

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