

PROCEEDINGS OF THE EIGHTH NATIONAL HORTICULTURE SEMINAR ON Horticulture Development Towards the Pace of National Economic Growth



18th April, 2013

(5th Baishakha, 2070)

Kirtipur, Kathmandu, Nepal

18th-20th March, 2013

(5th- 7th Chaitra, 2069)



NEPAL HORTICULTURE SOCIETY
Khumaltar, Lalitpur



NEPAL AGRICULTURAL RESEARCH COUNCIL
HORTICULTURE RESEARCH DIVISION
Khumaltar, Lalitpur



AGRICULTURAL AND FORESTRY UNIVERSITY
Rampur, Chitwan

नेपाल सरकार

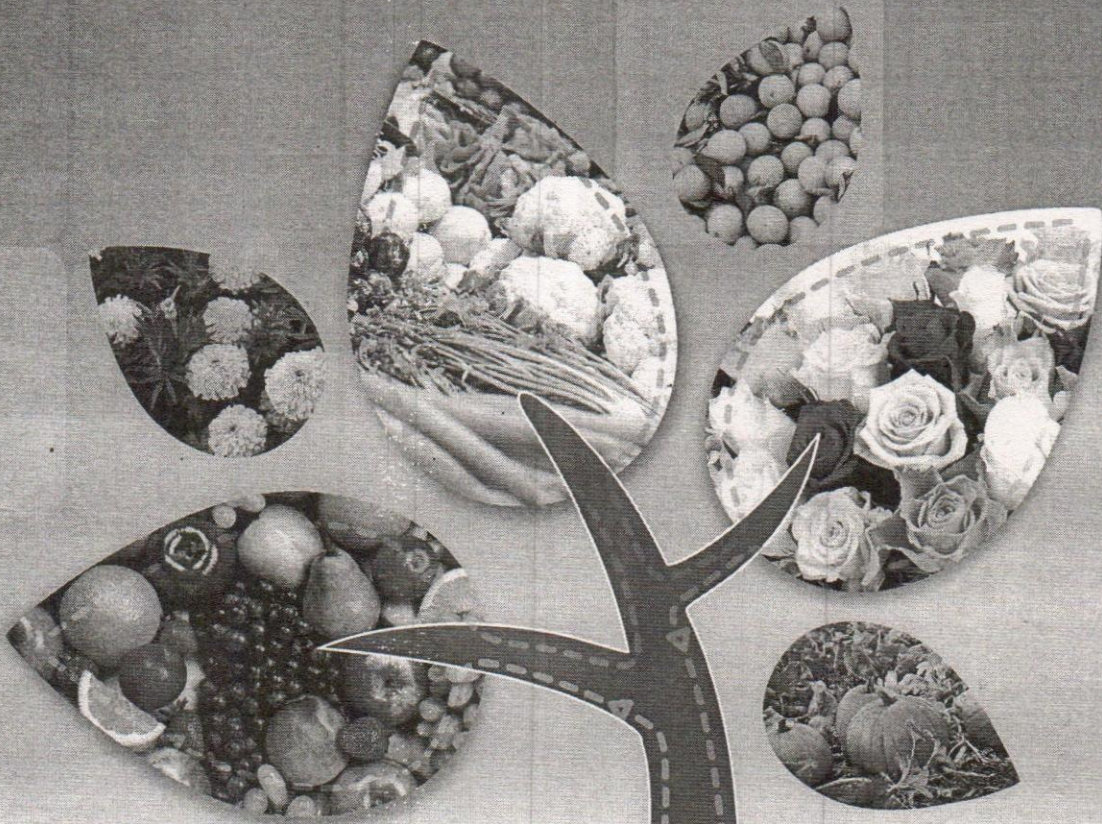
कृषि बिकास मन्त्रालय

व्यवसायिक कृषि तथा व्यापार आयोजना

व्यवसायिक कृषि तथा व्यापार आयोजना विश्व बैंकको आर्थिक सहायतामा २०६६ कार्तिक २७ गतेदेखि कार्यान्वयनमा रहेको छ र यस चरणको समाप्ती २०७२ आषाढ मसान्तमा हुनेछ र दोश्रो Additional Financing अनुसार June 2018 सम्मको समय रहनेछ । यो आयोजनाको मुख्य उद्देश्य आयोजना लागु भएका जिल्लाका निर्दिष्ट कृषि उपजहरुको मूल्य श्रृङ्खलामा आवद्ध साना कृषक र कृषि उद्यमी एवं कृषि व्यवसायीहरुको प्रतिस्पर्धात्मक क्षमतामा सुधार गर्नु रहेको छ । यो आयोजना पहिलो चरण अर्न्तगत धनुषा, महोत्तरी, सर्लाही, रौतहट, बारा, पर्सा, चितवन, धादिङ्ग, काठमाडौं, ललितपुर, काभ्रेपलाञ्चोक, नवलपरासी, तनहुँ, लमजुङ्ग, कास्की, स्याङ्गजा, पाल्पा, रुपन्देही, कपिलवस्तु, दाङ, बाँके, बर्दिया, सुर्खेत, कैलाली र कञ्चनपुर गरी जम्मा २५ वटा जिल्लाहरुमा सञ्चालित छ र दोश्रो चरण अर्न्तगत आ.व. २०७०।०७१ बाट नेपाल भर संचालन भइरहेको छ ।

तोकिएको उद्देश्य हासिल गर्न आयोजनाले कृषि उत्पादनलाई आवश्यक पर्ने उन्नत तथा गुणस्तरीय बीउको सुनिश्चितता एवं उन्नत नशलका पशुपंक्षीहरुको उपलब्धता सरल र सुलभ तुल्याउनुका साथै कृत्रिम गर्भाधान सेवालाई विस्तार गर्ने, कृषकको बजारीकरण क्षमता अभिवृद्धि गर्ने, विशेषताको आधारमा तुलनात्मक लाभ भएका कृषि तथा पशुजन्य उत्पादन र वस्तुहरुको विशिष्टताबाट लाभ लिन प्रतिस्पर्धी कृषि मूल्य अभिवृद्धि श्रृङ्खलाको स्थापना तथा सुदृढीकरण गर्ने जस्ता रणनीति अवलम्बन गरेको छ ।

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EIGHTH NATIONAL HORTICULTURE SEMINAR

Seminar Theme

Research Session: **'Streamlining of horticultural Research for Development'**.

Development Session: **' Horticulture Development towards the Pace of National Economic Growth'**

Venue:

Research Session: **National Agriculture Research Institute, Khumaltar, Lalitpur, Nepal**

Development Session: **Central Horticulture Centre, Kirtipur, Kathmandu, Nepal**

Dates:

Research Session: **Chaitra 5-7, 2070 (18th -20th March, 2013)**

Development Session: **Baishakh 5, 2071 (18th April 2013)**

Published by NHS

Acknowledgement

Nepal Horticulture Society highly acknowledges the following organizations for their financial and other (Physical) contributions to organize the seminar successfully:

- Micro- enterprise Development Program (MEDEP)
- Local Initiatives for Biodiversity, Research and Development (LI-BIRD)
- High Value Agriculture Project (HVAP)
- International Development Enterprise (IDE)
- Fruit Development Directorate (FDD)
- Vegetable Development Directorate (VDD)
- National Agriculture Research Council (NARC)
- High Mountain Agribusiness and Livelihood Improvement Project (HIMALI)
- Central Horticultural Center, Kirtipur, Kathmandu

Message from President

Nepal is predominantly an agrarian country with physiological and ethnic diversity. More than 80 per cent people live in rural areas and about 66 per cent of the total population depends on agriculture for their livelihood. In agriculture, horticulture sector has multifaceted roles in the growth and development of national economy. But it has not got that sort of national priority so there is a need for reformation to step ahead for the betterment of horticulture and horticultural profession. The vision and mission of horticulture must be addressed adequately to solve the emerging issues like food security, climate change, poverty alleviation through modern techniques and commercializing horticultural crops such as fruits, vegetables, flowers, spices, plantation crops, and their preservation for long term use.

Nepal Horticulture Society (NHS) is a professional association established in 1990 that holds together a large number of horticulturists working in diverse fields in the country. The suggestions put forth by the expert professionals are greatly appreciated in order to reform horticulture sector for bringing its role to alleviate food and nutritional insecurity situation in Nepal. Since its establishment, NHS has been regularly publishing workshop proceedings, Nepalese Horticulture Journal, NHS Members' Directory, Technical and Experience Sharing Books. This eighth proceeding is the compilation of research and development papers presented in Khumaltar, Lalitpur (18th-20th March, 2013) and Kirtipur, Kathmandu (18th April, 2013) respectively. I express my sincere gratitude and thanks to Dr. Shantaman Shakya, Editor-in-Chief, for leading the Editing Work and all other members of Editing Board. Similarly, I wish to extend sincere thanks and to Dr. Bhim Bahadur Khatri, a Senior Horticulturist, for commendable task of compiling the workshop materials and Mr. Indra Raj Pandey, Senior Horticulture Expert, for his remarkable support on preparing Statement for Inaugural Session of the AGM. Since, the various tasks including background work on developing proceeding works need different skills and personalities; hence I can not remain silent without appreciating the support rendered by Dr. Bharat Kumar Poudel, Mr. Basudev Subedi, Mrs. Yam Kumari Shrestha, Dr. Krishna Prasad Poudel, Mr. Dinesh Sapkota and all other members of NHS.

NHS has been dedicated and playing positive role in the development of horticulture and sincerely working to alleviate the problems and constraints seen in the field of horticulture. Hence, I would like to request all the members of NHS and other stakeholders either individual or institution to give earnest attention in horticulture sector so that agriculture could contribute with a remarkable stake in the national economy and could provide nutritional security to the people for creating a healthy society.

Mohan Bahadur Thapa
President

Inaugural Session
National Horticulture Seminar and Annual General Meeting (AGM)
2070 (2013)

Nepal Horticulture Society (NHS) organized 8th **National Horticulture Workshop and Annual General Meeting (AGM) and Executive Committee Election on 5th Bhaishak (April 18, 2013) at Central Horticulture Center Kirtipur.** Most of the distinguished Horticulturists and high level dignitaries participated in the workshop. The workshop was inaugurated by Secretary, Ministry of Agriculture Development, and Mr. Jaya Mukunda Khanal by watering the pot plant.

The inaugural session:

Chairperson: President of NHS Prof. Dr. Gyan Kumar Shrestha

Chief Guest: Secretary, Ministry of Agriculture Development, Mr. Jaya Mukunda Khanal

Special Guest: Vice Chancellor, University of Agriculture and Forestry Prof. Dr. Kailash Nath Pyakurel

Guest: Director General, Department of Agriculture, Mr. Leela Ram Paudel

Welcome and objectives of the workshop by secretary of NHS Mr. Lekhnath Acharya

It gives me great pleasure to welcome you all to the 8th Horticulture Workshop organized jointly by Nepal Horticulture Society, Fruit Development Directorate, Vegetable Development Directorate and CEAPRED. I on behalf of Nepal Horticulture Society (NHS) and other organizers, take this opportunity to express my warm greetings, good wishes and compliments on the occasion of Nepali New Year 2070. The presence of respected Secretary of Ministry of Agriculture Development showed his strong commitment on horticultural development of Nepal. On this occasion I would like to highlight some of the facts of horticulture in Nepal. Horticulture sub-sector can be the main component of economic growth of Nepal. Horticultural crops have been recognized as High Value Crops in Agricultural Perspective Plan. For harnessing agro-bio diversity of Nepal horticultural crops have many comparative advantages and must be given priority in agriculture sector. Though Horticulture Department was established two times in the history of agriculture development in Nepal, however, it was demolished without any valid reason. At present cereal based research and extension system dominates and horticulture has been kept aside from both research and extension.

Nepal Horticulture Society is an independent non-governmental institution and this present workshop has been organized with unanimous request of all concerned stakeholders. The main function of this organization is to help and provide feedback to government in formulating policy and strategy for horticultural development, support in program planning involving all governmental and non-governmental institutions and all concerned Nepali citizens and well wisher of Nepali Horticulture foreigners also.

I wish that this workshop will bring some new dimension in horticulture sub-sector development. All horticultural farms and station must be engages in research and

development and should not be seen from direct cost benefit point of view and should be developed as the center of excellence for horticultural innovation.

Award Distribution Program

Two important awards of excellence have been established.

1. Gauri Rani – Shiva Nepali Pradhan Excellence Award in Horticultural Educational (M. Sc)

This award is established by Mr. Shiva Bahadur Nepali Pradhan and highlighted about this award of excellence. He said knowledge is power. Horticultural knowledge is the power for horticultural development. In wider sense, the Sun is the source of all power and energy. From the Sun, all living beings receive solar energy for survival. Fruits, vegetables and all crops and vegetations prepare food materials through a process of photosynthesis. Those photosynthetic products are the source of all living beings who cannot prepare food directly taking energy from the Sun. Proper utilization of the energy can bring happiness and impart happiness to other persons.

2. Best Organic Grower of the Year Award

This award is established by Senior Horticulturist Mr. Madan Kumar Rai and highlighted about the award stating that he is devoted to link agriculture with nature. He further explained about his campaign that what nature has given to human being must let back to nature for bio-balance. With this campaign believed that whole Nepal can be converted to organic agriculture and each Nepali can become millionaire through organic campaign. Mr. Prem Lama of Kavre has been working in organic agriculture since long and has contributed a lot in this endeavor that has made him very happy. It gave a great pleasure to Mr. Rai while awarding the best organic grower of the year to Mr. Prem Lama.

Expressions of Mr. Prem Lama on the award

Mr. Lama expressed that he has been honored with this award. He explained how he entered into organic agriculture. When he was above fifty years he faced different physiological disorder and diseases. He has very good land in Sanga of Kavre where he could produce different kinds of agriculture products. While eating those pest free natural products, many disorders and diseases were cured. He shared his new agricultural products with his friends and they like it and he was encouraged for organic agriculture. Since last one and half decade he has been increasing organic agriculture and expanded his farm in Shapuri, Melamchi and owns about 400 Ropani (20 ha) land. He believes that only agriculture can make Nepal prosperous where 66 % people are directly engaged in agriculture. Organic products fetch around 90 higher prices compared to non organic one. New crops like ground apple, gooseberry and Paulina etc.

Unleashing of a book prepared by NHS

Nepal Horticulture Society has prepared a historical book about horticultural development in Nepal named "**Smriti Sangalo**". This book was released for public jointly by Chief Guest and Secretary of MoAD and special Guest Prof. Dr. Kailash Nath Pyakurel.

Few words by distinguished guests

1. **Mr. Padam Prasad Shrestha**, Senior Horticulturist congratulated NHS for bringing Smriti Sangalo. He wished such publication from many senior horticulturists also as historical memory of the sector. This Smriti Sangalo gives vivid explanations about horticulture and rural situation of Nepal of fifty years ago. If compared those situations with today's facilities people engaged in horticulture today must be encouraged to work more efficiently. He memorized his early days of service of 2015 B.S and travelling about 65 districts on foot. From Jumla he could reach Kathmandu in 11 days of fast walk. He wished the young horticulturists to take inspiration from such experiences of seniors of the past.
2. **Mr. Ram Badal Shah**, past president of NHS remembered the days of his service when gold was Rs 125 per Tola and his salary was Rs 350 per month. Though the time was tough but compared to today's salary the then salary was much higher which could keep us honest and dedicated to the work. The then hard work and dedication gave us satisfaction. The highly qualified and experienced members are the real wealth of NHS and should be able to use them and their golden experiences.
3. **Mr. Leela Ram Paudel**, DG/ DoA, expressed his happiness to in the midst of senior horticulturists who have gathered for good cause of horticulture development. With its highly qualified and experienced members, NHS can contribute a lot in the development of Horticulture in Nepal. "As I understand that there are some technical papers to be presented in technical session whose outcome will be beneficial to Nepali farmers, I believe" Mr. Paudel said. He further explained that budget in horticulture sector has been increased by two to three fold during coming year and will be favorable situation for horticulture development in GoN sector. If we could produce high quality organic product the potential of this sector will still increase further. Organic farming has not only national but international market as well. Horticulture crops have to contribute in food security food safety and nutrition security as well. He congratulated those who were awarded in this function. He also wished the members to select/elect able leaders in the executive committee.
4. Special Guest Prof. **Dr. Kailash Nath Pyakurel** expressed happiness to be with seniors as he entered in the job during B.S 2022. He discussed about the agriculture policy of 2029 which specified crops and its specific scope, government facilities, and development of commodity program. He also highlighted the changed food habits and diminishing role of local foods and its development. Bio-technological tools have helped scientists to develop new foods and GMO, however organic farming also in increasing demand. Science and technology suitable to Nepal must be developed. At least 6-7% of total budget must be spent in agricultural research with special priority in horticulture and hybrid variety development. He wished that active and eager to work members may come forward in NHS.
5. Chief Guest **Mr. Jaya Mukunda Khanal**, Secretary MoAD extending the message from the Minister of Agriculture, Mr. Khanal said that MoAD is always positive for the positive proposals brought forward by the NHS. He congratulated to the honored and awarded persons and praised the good initiation taken by Senior Horticulturists Mr. Shiv Bahdur Nepali and Mr. Madan Rai. He wished such activities should be promoted and proliferated. Harnessing the agro-ecological boon and bio-diversity of

Nepal, high value crops like citrus, apple, cardamom, vegetable seed and flowers can be exported and earned foreign exchange to reduce trade imbalance. This "Smriti Sangalo" has included very good experiences and memories of senior horticulturists. Young horticulturist must read it and learnt from the senior horticulturists.

Citrus export to china has begun, however observation of quarantine requirement must be met. As I heard there are many pest and diseases problems in citrus, it requires collective endeavor and MoAD will support any proposal brought forward to solve these problems. Similar is the case with cardamom. Therefore to acquire a degree is one basic thing but to utilize them in the development of country is has been considerable. Most horticulturists prefer to work as consultants and resource persons but they themselves seldom go for cultivation is the irony of this country.

6. Chairperson of the inauguration ceremony, Prof. Dr. Gyan Kumar Shrestha highlighted that the National Horticulture Workshop and Annual General Meeting (AGM) and Executive Committee election of NHS 2070 (2013) has been organized coordinating with different organizations. The workshop was divided in to two different sessions. Technical research papers have been presented in the workshop organized in NARC from Chaitra 5 to 7, 2069. The present workshop will concentrate on thematic papers. Up to now NHS has brought five publications related to horticultures. The present "Smriti Sangalo" contains 11 papers. This Sangalo is the result of inspiration and advice of Mr. Indra Raj Pandey, a senior horticulturist. The executive committee of NHS contributed in developing horticulture and floriculture course for B. sc. Horticulture and floriculture and is implemented.

Now at this occasion I wish that the New Year 2070 is preposterous to all. I express my deep sense of gratitude and thanks to all those who accepted our invitation and participated in this National Horticulture Workshop and Annual General Meeting (AGM) and Executive Committee election of NHS 2070 (2013). Thank you all

Theme Paper Presentation Session

This theme paper presentation session was chaired by the senior Horticulturist Mr. Shiv Bahadur Nepali Pradhan. Different theme papers were presented. Most papers concentrated on horticulture development experiences of past, present and future strategies and program to be undertaken. Papers also highlighted about the change required in policy and approach for full development of the horticulture sector. During open floor discussion different questions, queries, suggestions were received and respective authors responded the queries and accepted the practical suggestions.

Closing the theme paper presentation session the session chair Mr. Shiv Bahadur Pradhan opined as follows:

- Agriculture education in Nepal was started with Agriculture School at Singha Durbar and Shree Mahal to produce qualified field level Junior Technical Assistant and Junior Technician, now has developed itself up to Ph. D level study which in itself a great academic jump.

- The present need in horticulture is to devote in practical and adaptive research in variety development including hybrid for import substitution and export promotion. Off-season onion production if extended properly and promoted properly supply will be regularized.
- Department of Horticulture is the need of time and all horticultural farms/station whether it is under NARC or Department should concentrate on research liked to farmer's problem and national requirement.
- Nepal Horticulture Society is an independent institution and should remain independent, however sometimes it seems that NHS is affected by government program. All NHS members coming from DoA, NARC, IAAS, University of Agriculture and Forestry (UA&F) or I/NGOs, private sector or independent have equal right and each is free to express his/her views.
- The data of horticultural contribution is confusing and there are anomalies in the facts and figures.
- The proposed Department of Horticulture must include Horticultural Market and Post Harvest handling. In the past the Department of Horticulture was established two times. If honestly analyzed the results today we are harvesting are the works of those days when Department of Horticulture was in place. Horticulture plans and programs are good; however human resource to implement it has been the limiting factor both in DoA and NARC. IAAS, UA&F, NARDF are also doing some research on horticulture; however the findings and results are linked with extension for up scaling properly.
- The average landholding of Nepali farmers is less than one ha. Most farmers are subsistence and devoid of other cash income opportunities in the rural areas. The youths are away from home to Gulf and other countries for cash earning. In such situation how horticulture can be commercialized. Yes, there are some exceptions in case of vegetables. Department of Horticulture if established must consider horticulture commercialization linking cash income activities in the rural areas till the plantation horticultural crops come in fruiting/bearing and gives cash income.
- There is high risk in one village on product in Nepali farming system crop diversification and livestock improvement must go together in case of small holders and medium farmers who are in majority.
- Horticulture contributes around 30% of Agricultural Gross Domestic Product (AGDP) and at least 30 % of agricultural budget should be allocated in this sector.
- Cardamom research is in low key and Chhirke/Hurke disease has been the problems from decades and not much attention has been paid.
- The educational environment of IAAS and UA& F is alarming. Reviewing the history of agricultural education, UA& F must be one and IAAS must come under UA&F. Personal benefit of some faculty members must not hamper the agricultural education.
- The cost of production in Terai is 15 to 20 % higher compared to neighboring India which makes difficult for competitive marketing of Nepali product.