

Resolution of the 2nd International Conference on Horticulture

In line with Sustainable Development Goals (SDGs), the Nepal Horticulture Society (NHS) organized the 2nd International Conference on Horticulture with the theme “**Advancing Horticulture in Changing Climate and Biodiversity**” from 3 to 4 April 2023. This conference brought together horticulturists from Nepal, Bhutan, Pakistan, Sri Lanka and Bangladesh with the intension of sharing, learning and utilizing international experiences in horticulture research and development in the current context. The conference was participated by 186 horticulturists, 5 country papers and 36 scientific papers were presented.

The Second International Conference on Horticulture expresses its gratitude to the Honorable Minister of Agriculture and Livestock Development Dr. Bedu Ram Bhusal for his gracious presence and commitment for the development of horticulture.

Richness in horticultural biodiversity, existence of different agro-ecological zones, accessibility to roads, availability of skilled human resources and technology, interest of private sector in horticultural enterprises, increasing demand in domestic and international markets indicate great opportunity for the development of horticulture in the country. However, the development is not getting momentum at desirable level. It is mainly due to constraints such as fragmented lands and low volume of production, unavailability of adequate land for cultivation, limitations in development and application of technologies, lack of specialized knowledge and skill, improper management of skilled human resources for research, development and technical services, inadequate post-harvest facilities, negative impact of climate change, loss and degradation of agricultural biodiversity. Emerging issues include market distortions due to unregulated trade of horticulture produce from neighboring countries, seasonal nature of domestic production, unorganized marketing and distribution system.

Throughout the conference, scientific papers were presented on various topics related to horticulture. During the last session, all the participants were divided into four groups to discuss on four thematic topics: (a) Climate change and horticultural biodiversity; (b) Pomiculture, Olericulture and Floriculture; (c) Horticulture education, extension and research; and (d) National and International Collaboration. Each group identified the key areas for implementation and presented their findings in plenary session which were endorsed by the participants.

Considering the potentiality of horticultural crops and their importance to meet the target of SDG 2 (end hunger, achieve food security and improved nutrition and promote sustainable agriculture), it is highly desirable that the Government of Nepal develops conducive policies and plans for horticulture development. Recognizing the important role of horticulture in overall economic development of the country, considering the major constraints, noting the suggestions of distinguished speakers from home and abroad and incorporating the opinion of the enthusiastic and active participants the conference proposes the following resolutions:

1. Climate Change and Horticultural Biodiversity

1.1 Climate Change

Way Forward	Responsible Agencies
<ul style="list-style-type: none"> • Conservation and management of pollinators such as honeybees, bumble bees, etc. • Adoption of eco-friendly pest management practices 	Government and private sectors including agro-vets
<ul style="list-style-type: none"> • Identification of gene of interest to use in crop improvement • Variety development/ improvement (climate resilient varieties) • Design new cropping pattern 	Research, Education and Extension agencies
<ul style="list-style-type: none"> • Development and adjustment of new cropping calendar 	Research and extension agencies
<ul style="list-style-type: none"> • Emphasis on locally available organic matter management • Crop residue management to improve the soil condition 	Research, Education and Extension agencies, Private firms, farmers

Way Forward	Responsible Agencies
<ul style="list-style-type: none"> • Technological interventions and capacity enhancement of technical manpower 	Extension agencies and collaboration of all stakeholders
<ul style="list-style-type: none"> • Water conservation practices • Ground water recharge programs • Raising awareness about climate change related risks and preparedness for risk minimization • Prevention, adoption and mitigation practices 	Government and community partnership

1.2 Horticultural Biodiversity

Way Forward	Responsible Agencies
<ul style="list-style-type: none"> • In-situ and ex-situ conservation • Policy intervention • Bio-diversity watch group • Germplasm ex-change program • Human resources capacity enhancement 	Gene Bank, other government agencies like horticulture farms/ centers, research stations, academic institutions
<ul style="list-style-type: none"> • Promotion and prioritization of local resources • Identification of specific value or nutritive value of indigenous crops and wild edible species • Domestication of wild edible species • Introduce new food habits and diversify food items, market diversification • Link with agro-tourism 	Ministry of Agriculture and Livestock Development (MoALD)- Policy level intervention Department of Agriculture (DoA), Department of Food Technology and Quality Control (DFTQC), Provincial Ministries Tourism sectors (hotels and homestays)
<ul style="list-style-type: none"> • Conservation of locally available microbes and soil inhabitants. 	Research institutions like NARC, Universities, Gene Bank
<ul style="list-style-type: none"> • Promote diversified cropping system (eg. Home garden) • Recognize the importance of subsistence farming 	MoALD - Policy level intervention, Education and extension agencies
<ul style="list-style-type: none"> • Community forestry based on fruits and tuber crops • Promote cultivation of wild fruits and vegetables • Repatriation - Practices of returning seeds to nature such as <i>Bala Chaturdashi</i> festival 	Policy intervention by the government and ministry (MoALD/MoFE) Extension agencies in 3 tiers, farm/ centers, community forests, private sectors
<ul style="list-style-type: none"> • Promote internal research and development of national hybrid varieties based on local landraces. • Human resources capacity enhancement • Use of locally adapted landraces 	NARC, Universities Ministries, DoA, farm/ centers

2. Pomiculture, Olericulture and Floriculture

Way Forward	Responsible Agencies
<ul style="list-style-type: none"> • Scale up production through the proper utilization of fallow and underutilized land for suitable horticultural crops 	Three tiers of government (MoALD DoA, DoAD, local bodies), farmers group, cooperatives, private companies
<ul style="list-style-type: none"> • Technology generation, validation and dissemination to ensure quality inputs and technologies • Effective Subsidy Management System 	NARC and DoA, Universities Federal and provincial ministries, local levels, projects
<ul style="list-style-type: none"> • Effective Regulatory Mechanism (Market, input supply and others) 	SQCC, Seed Laboratories, DoA, Quarantine bodies

Way Forward	Responsible Agencies
<ul style="list-style-type: none"> Farmer support program (loan, insurance) 	ADBL, Other Commercial Banks, Insurance Companies, MoALD of federal and provincial government
<ul style="list-style-type: none"> Strengthen research centers, government farms and advisory sector Strong collaboration between Research, Education and Extension system 	MoALD, NARC, DoA, provincial DoAD, Agricultural Universities
<ul style="list-style-type: none"> Low cost locally feasible prototype development and dissemination 	NARC, Agricultural Universities, DoA and DoAD
<ul style="list-style-type: none"> Timely fulfillment of human resources in research stations and horticultural farms/centers, Youth Retain Programs 	MoFAGA, PSC, MoALD of federal and provincial government MoALD
<ul style="list-style-type: none"> Capacity Development (Farmers, Technician, Researcher) 	Research, Extension and Education agencies
<ul style="list-style-type: none"> Updated Curriculum and Internship Provision (More practical based exposure to students) 	Agricultural Universities, NARC, Research and Horticultural Farms under federal and provincial government, Private Firm/ companies

3. Horticulture Education, Extension and Research

Way Forward	Responsible Agencies
<ul style="list-style-type: none"> Conduct research on coordination based on problems identified by National Agriculture Technical Working Group (NATWG) 	NARC, DoA and Universities
<ul style="list-style-type: none"> Emphasize and select the research which address farmers field problems 	NARC, DoA, Farm stations and Universities
<ul style="list-style-type: none"> Coordination and cooperation should be directed among the related organizations for the identified problems (Coordination among education, extension, research institutes and administrative mechanism (including Public Service Commission) for engaging human resources in the horticulture sector) 	PSC, MoALD, NARC, Agricultural Universities

4. National and International Collaboration

4.1 National Collaboration

4.1.1 Among the Three Tiers of the Government

Way Forward	Responsible Agencies
<ul style="list-style-type: none"> Establishment of formal linkage mechanism (Both vertical and horizontal) 	Federal, Provincial and local government
<ul style="list-style-type: none"> Strengthen institutional mechanism of commodity research 	NARC, Department of Agriculture, Agriculture Knowledge Centers and Commodity specific farm/centers
<ul style="list-style-type: none"> Establishment and strengthening of national level commodity farm centers for specific commodities such as Floriculture 	MoALD, DoA

Way Forward	Responsible Agencies
<ul style="list-style-type: none"> Establishment of institutional linkage and collaboration through appropriate policy/ mechanism among research-extension-education 	MoALD, AFU, TU/IAAS, PU, KU, NARC
<ul style="list-style-type: none"> Strengthen and support private sectors 	MoALD, FNCCI
<ul style="list-style-type: none"> Strengthen cooperative/ group marketing system 	Federal and Provincial Governments, Local Levels, Cooperatives, Commodity Associations
<ul style="list-style-type: none"> Participation and collaboration in common platforms 	MoALD, DoA, NARC, Universities, FNCCI, NGOs, INGOs

4.1.2 Collaboration and coordination among the public, private, cooperatives and developmental partners

Way Forward	Responsible Agencies
<ul style="list-style-type: none"> Cooperative production and marketing system 	MoALD of Federal and Provincial Government, Cooperative Board
<ul style="list-style-type: none"> Investment by private sectors for research 	FNCCI, Private firms and Companies
<ul style="list-style-type: none"> Organization of trade fairs 	DoA, NARC, Universities and FNCCI, Private firms and companies, Boards
<ul style="list-style-type: none"> Exchange/sharing of information and knowledge with development partners, creating knowledge products 	DoA, NARC, Universities, FNCCI, Private firms and companies, Development partners

4.2 International Collaboration

Way Forward	Responsible Agencies
<ul style="list-style-type: none"> Exchange of germplasm 	Research institutes or resource centers of the countries involved
<ul style="list-style-type: none"> Transfer of technology/Service exchange 	Research institutes of the countries involved, private firms and companies
<ul style="list-style-type: none"> Internationally collaborated research 	Research institutes/universities of the countries involved
<ul style="list-style-type: none"> Regional journal publications 	Horticultural societies of the countries/region
<ul style="list-style-type: none"> Exchange/exposure visits 	Horticultural societies of the countries/region
<ul style="list-style-type: none"> Regular virtual regional discussions 	Horticultural societies of the countries, first initiation by NHS
<ul style="list-style-type: none"> Regional marketing forum 	MoALD, FNCCI
<ul style="list-style-type: none"> Direct trade of horticultural crops 	MoALD, MoICS, FNCCI, National Tea and Coffee Development Board
<ul style="list-style-type: none"> Developing common standards and protocols for export/exchange (GAP, SAARC GAP etc.) 	MoALD, MoICS, FNCCI, National Tea and Coffee Development Board
<ul style="list-style-type: none"> Nepal should become a national member of the International Horticulture Society 	MoALD, NHS
<ul style="list-style-type: none"> Making SAARC Horticulture Society functional 	NHS, SHS Members