8th Agronomists' National Workshop Report Ashad 30-31, 2070 (14-15 July 2013)

Jointly Organized by Crop Development Directorate and Agronomy Society of Nepal

Participants: Agronomists and ASoN members/life members and invitees from NARC DoA, IRRI-Nepal, SDC, IAAS, different I/NGOs, retired professional from NARC, IAAS, DoA and affiliated institutions.

A. Objective/s:

The workshop was conducted to discuss about the current issues in the field of Agronomy, to elect new executive committee (EC), present audit report and other activities done during the period and to amend constitution of the Agronomy Society of Nepal (ASoN) by the general assembly of the ASoN.

B. First session of the first day, July 14, 2013: Inaugural session

There was brief introduction of participants that followed formal kicked off of the workshop.

Chairperson: Dr. Mina Nath Paudel, President, Agronomy society of Nepal (ASoN)
Chief Gues: Dr. Dil Bahadur Gurung, ED, Nepal Agricultural Research Council (NARC)

Chief guest inaugurated the workshop by watering the maize plant. After inauguration of the workshop, other programs followed as:

Welcome to the participants: Bimal Thapa, Executive member, ASoN

Mr. Thapa welcomed participants of the of the 8th ASoN workshop. He welcomed agronomists who attended the workshop from the NARC, DoA, IAAS, I/NGOs, professionals and retired agronomists who were focus of the workshops.

Inaugural remarks by the Chief Guest, Dr. DB Gurung, ED, NARC

Dr. DB Grung, Executive Director of the NARC, inaugurated 8th ASoN workshop by watering a full bloomed maize plant. Being a plant breeder, he was pretty happy to water the plant for which he has special affection. He explained that ASoN has initiated a new system of inauguration of a workshop by caring plants of special importance, the cereal, which are the food suppliers of the people. He emphasized that Agronomy is a high scoped discipline and Agronomists should develop new technologies by exploiting all the factors such as environment, stress, agro-meteorology, temperature, weed management and many other issue pertaining to crop production and management. Furthermore, he stressed that NARC is involved for conduction of agronomic research given special thrust in the following sectors:

i. Food and nutrition security
ii. Poverty alleviation
iii. Environment conservation

Aside from the above sector, improved varieties and improved management practices of crop coupled with plant protection are the research focus of NARC. Similarly, production and post harvest technologies of high value crops, RCTs and profitable technologies development are special focus of research. In addition to this, research priority on crop, in-situ and ex-situ conservation of genetic resources is equally important and agronomy should take lead in such issues.

Now a days, we can find change in everything except human food and it should be major concern in agronomy. In agriculture development, 1/3rd contribution is done by breeding, 1/3rd by agronomy and 1/3rd by policy. It indicates importance of agronomy. We are facing challenge of how to make our scientists and extension workers more competitive. So, there is some change in our planning these days. Every staff of office is now involved in projects. NARC is following a standard procedure for implementing research projects on issue based projects so that output will be achieved according to need of the day. NARC is an apex research institute but it is having dearth of resources. So NARC is trying to use knowledge and experience of national scientists outside NARC as well.

Key note address by Ms Yamuna Ghale, SDC, Nepal "proposed agriculture development strategy (ADS) for food and nutrition security"

Ms Ghale is professional agronomist who works in the field of policy issue related to social inclusion and gender perspective. In the 8th ASoN workshop she was asked to speak on **"proposed agriculture development strategy (ADS) for food and nutrition security".**

She appreciated the ASoN for providing the chance to deliver keynote speech. She was one of the members of the Agriculture Development Strategy (ADS) team that prepared ADS for 20 years which is replacing APP from 2015 onwards. She informed the workshop that the TA team prepared the ADS and handed over to the Ministry of the Agriculture Development. It is departure from APP. Land is taken as an integral part and it is inclusive. Farmers are different and different responses in need of farmers are a must. Research is lacking in areas of poverty and malnutrition. ADS is for 20 years with 10 years of working calendar from 2015 onwards. Agriculture and non-agriculture should go hand on hand. The vision of ADS includes four basic pillars:

i. Productivity
ii. Governance
iii. Profitable commercialization
iv. Competitiveness (import substitution and export promotion)

Service system has not fully been decentralized. ADS focuses on decentralized service system. There is provision of VDC and DDC level service providers (minimum graduate level field workers). One of the targeted provisions is service that should be provided to the farmers and commercial farmers will pay for the service in the form of voucher system which is going to be introduced for the first time in Nepal. Program and resources should go hand in hand to achieve the targets envisaged in the ADS. ADS is prepared by a joint team of 13 donors which are assisting Nepal in different fields. She opined that ADS will address need of Nepalese agriculture in coming days. She was thankful to share her views in the ASoN workshop

Progress report by Dr. MN Paudel, president of the ASoN

Dr. Mina Nath Paudel, President, ASoN, highlighted the achievement of the ASoN during the period**.**

The achievement done up to now were creation of google groups mailing address for agronomists who provided email address was agronomists@googlegroups.com**.** In this group, agronomists who provided email address can be contacted for flow of information among them. There was dearth of fund continuing web page of ASoN, however the web page can be visited up to now from the site, www.ason.org.np. Two volumes of the Agronomy Journal of Nepal can be downloaded freely from the site, which is: *www.nepjol.info/index.php/AJN*member of ASON/Llife member ,ikewise are increasing and up to date there are 160 life members/ members associated with ASoN. In his deliberation, Dr. Paudel gave special remarks in the Workshop, which as below:

Special address to the workshop

1. Agronomy for seed and food security in Nepal by Dr. MN Paudel, President, ASoN

Challenges of agronomists in Nepal

To address food and seed security in Nepal, there are innumerous challenges of agriculturists in general and agronomists in particular. Some of the most relevant challenges are given below:

- Food insecurity in 39 hill districts and in some of the Terai districts and there is report that 4 million people are suffering from food shortage as a negative effect of climate change on food crops has also been experienced.
- There are no recommended varieties of underutilized crops (buckwheat, oat, naked barley, fox tail millet (*Kaguno*), poroso millet (*Chino*), amaranthus (*Latte*) for high hills and trans-Himalayan regions to sustain food security.
- Resurgence of virulent insect pest and diseases of major crops i.e. (yellow rust, grey leaf spots, blast of rice, red ants, potato tuber moth, blight of potato, white grubs and many more have been causing reduction in food production.
- No systematized study of fodder species in high hill domains for feeding animals in winter season and fodder lean periods to increase their productivity.
- Resource conservation technology (RCT) in wheat not tide up with in- built program of extension program
- Conservation agriculture (CA) still in infancy.
- Lack of scientific agronomic practices to cope up with drought/flood prone areas as mitigation and adoption of climate change strategies.
- Dire need of supply of quality seed of food crops.
- Mass scale transactions of low quality agriculture inputs flow in the market (seed, fertilizer, pesticides and hormones) have been serious threat of modern agriculture.

- Recommended packages of practices (PoP) has not been massively up scaled to clienteles.
- Wide range of attainable yield gaps situation in Nepal (Fig. 1).

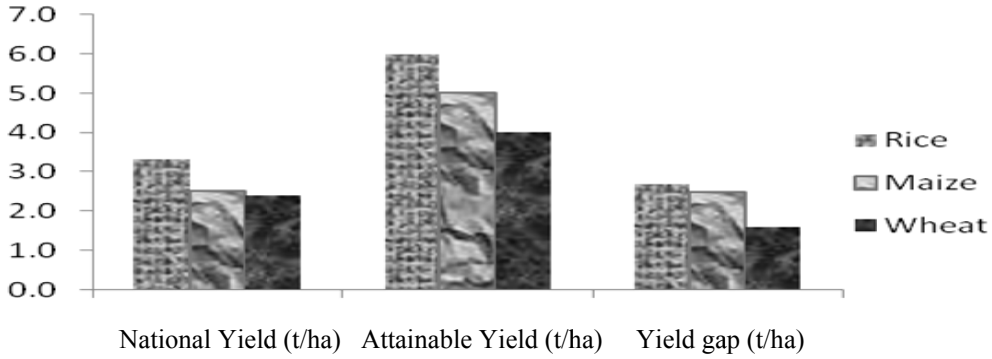

Fig. 1 Yield gaps of major cereals in 2012, Nepal

Opportunities of agronomists

Despite these gloomy pictures, there are vast opportunities of agronomists which are as follow:

- More focus should be given to address cash crops for food security and income generation in food deficit regions of mid and far western hills.
- Agronomic study to address problems encountered through introduction of new technology (hybrid varieties/ and other biotechnological outputs in agriculture) by farmers and some agencies e.g. sterility in hybrid maize in Terai and rice in far western region.
- Location specific agronomic research to address yield gaps.
- Site specific fertilizer recommendation on the basis of soil tests to increase productivity.
- Agronomists should work hard to feed the ever burgeoning population of Nepal. And present level of production should increase many times to feed the hungry mouth of Nepalese (Table 1). This is an issue very urgent to be taken seriously by agronomists to increase production and productivity of cereal crops in Nepal.

Table 1. Area production and productivity of cereal crops in 2009/10* against projected productivity as of 2009/10

Crop	Area ('000 ha)	Production ('000 mt)	Productivity (mt/ha)	Projected productivity to meet food requirement (t/ha) as of 2009/10	% increase of projected productivity over 2009/10 to meet food requirement
Rice	1556	4524	2.9	5.013 (45% share in food sufficiency)	72.9
Maize	875	1931	2.206	2.674 (30% share in food sufficiency)	29.7
Wheat	695	1344	1.93	2.805 (25% share in food sufficiency)	45.3
Total	3126	7799	2.5	2.5 (100% share in food sufficiency)	

*MoAC 2009/10

- Looking these scenarios, agronomists can contribute lot to address problem of food insecurity. Agronomic studies are location specific ones and many efforts are needed to develop technologies suited for different agro ecological domains across the country. Improved seed produced in-situ alone can address 10-15% yield increment without incurring any additional inputs. Improved crop husbandry practices such as plant population maintenance; timely sowing and resource conservation practices can contribute immensely for sustainable agriculture. There is a need to completely develop improved packages of practices to boost crop productivity in important food crops. To carry out these practices, agronomists' role is always vital.
- Agriculture is grossly underfunded and it is not getting functional priority by the government of Nepal. At least agriculture should get 10% annual budget of its contribution to AGDP. To meet the challenge of food insecurity, budget for agriculture should be increased by many folds aside from providing other logistic support as well. The government of Nepal should at least follow the international standard of funding for agriculture (Table 2).

Table 2. Required investment in agricultural R&D to attain food security and to reduce poverty and hunger in South Asia* (Current price in million US$)

Country	2002	2010	2015	2020	2025
Scenario 1.	**2.14% agricultural growth (to attain national food security)**				
Bangladesh	101.2	143.0	177.5	220.3	273.5
India	1258.3	1778.0	2206.9	2739.3	3400.0
Nepal	24.1	34.2	42.4	52.6	65.2
Pakistan	158.8	224.4	278.5	345.7	429.2
Sri Lanka	47.4	66.9	83.1	103.1	128.0
South Asia	1589.8	2246.4	2788.3	3461.0	4295.8

Country	2002	2010	2015	2020	2025
Scenario 2.	**4% agricultural growth (to attain household food security and alleviation of poverty and hunger)**				
Bangladesh	101.2	162.1	217.6	292.3	392.3
India	1258.3	2015.6	2705.8	3632.6	4876.5
Nepal	24.1	38.7	52.0	69.7	93.6
Pakistan	158.8	254.3	341.5	458.4	615.5
Sri Lanka	47.4	75.9	101.9	136.7	183.5
South Asia	1589.8	2546.7	3418.8	4589.7	6161.4

*Source. Singh, 2009, APAARI

- To make Nepalese agriculture as competitive as that of SAARC region investment on agriculture research for development should be tailored with the priority set by these countries as well. Only then can competitiveness of Nepalese farmers' safe guarded. Report suggests that Nepalese agriculture is grossly underfunded and there is a need to substantially increase investment in agriculture in general and research in particular to meet the present challenges of agriculture research for development in comparison to the SAARC countries as well. These challenges can be addressed by the active involvement of agronomists in their field provided logistic and financial facilities are met by the institutions concerned in Nepal.
- It is well anticipated that investment on roads followed by research and development could give maximum benefit to alleviate poverty in the country. Hence, functional priority on agriculture could be an alternative to uplift rural livelihood of Nepalese.

Adoption and mitigation strategies of climate change

Now climate change has become a buzz word in general and particular to agriculture. Nepal is practically not responsible for emitting green house gas (GHG) which is prime source of warming the atmosphere. Also she cannot make control the change in GHG level; hence, being a LDC, Nepal's role in mitigation of climate change is miniscule. Thus, adaption could be the only alternative to cope up of the vagaries of climate change. There are ways to address impact of climate change by following strategies of adoption and some of them are delineated below:

- Improvement of degraded land
- Rain water harvesting and soil moisture conservation
- Slope stabilization and management
- Agronomic management of high/low temperature stress crops and crop diversification
- Community based seed production and user groups formation for seed production
- Climate change adaptation and resource conservation practices to address rainfed agriculture
- Development and massive dissemination of drought /flood tolerant varieties of crops with complete packages of practices in domains appropriate

Way forward for Nepalese agriculture

- Agriculture should be a policy issue and should get topmost priority by the government
- Morale of agriculture workers should be boosted
- Filed level workers should be at least graduate standard
- There should be two graduates (crop and livestock) in each Village Development Committees i.e. youth employment for about 9000 agriculture graduates in Nepal to address food insecurity and unemployment
- Research, extension, and teaching should work hands in hands to address problem of food, feed, and nutritional insecurity
- Most of the central based offices should be relocated into domain based sites
- Immediately establishment of at least one agriculture university in each development region to address location and site specific problems
- Compulsory curriculum of agriculture in high school level
- University curriculum should be based on Nepalese agriculture perspective at least for academic research studies

2. National Seed Vision-2015 by DR Bhandari, Chief, SQCC, MoAD

Mr Bhandari presented major features of National Seed Vision 2025 with his key remarks as follows:

When he started his career as an agronomist, there was lacking of quality seed and now he is going to retire and still he is saying there is lack of quality seed as well. Among the essential inputs of agriculture; irrigation, fertilizers and seed, are the important ones and we can be easily self sufficient in seed even though there is a long way to go for other inputs of production including irrigation and fertilizers. Informally our seed (especially rice and wheat) is exported to neighboring countries and there is a need to formalize it. Basic components to develop seed sector are seed multiplication, seed processing, seed marketing and quality assurance. We all have to work for implementation of seed vision and this document has been accepted by Government of Nepal. Major issues raised by Mr. Bhandari were:

- Seeds are living materials and these should be stored in proper structures to maintain storage life of seed
- Current situation is that there may be many types of seeds such as open pollinated Hybrid, GMOs, LMOs and Terminator Gene in the market which we do not know what is happening actually in the market.
- 10 big country occupies 67 % of the global seed trade
- Main theme of seed vision 2025 is self sufficiency, import substitution, export promotion and hybrid seed development by public-private-partnership (PPP) initiatives jointly.

3. Problem and prospects of public private partnership in agriculture research and development by Durga Adhikari, General Secretary, SEAN

- Mr. Adhikari talked about PPP and opined that it is a team work for seed sector development.
- Highlighted that hybrid tomato variety Srijana developed by NARC is doing well because of involvement of PPP to maintain and popularize it.
- First hybrid maize Gaurab develpped by NMRP did not do well because of premature release that led to no synchronization of anthesis between male female inbreds in one hand and on the other hand it was not taken in PPP model.
- Agronomists should be in favor of farmers. Government should be as a facilitator and professional societies like ASoN should involve in policy making. Land policy is coming nicely i.e. agriculture land should not be used for other purpose. We have very less opportunities compared to developed countries. We should give projection about non agriculture sector as the successful program 'Zero hunger Program' practiced by Lula of Brazil.

4. Ways to enhance research-extension-education linkages by Prof. NK Chaudhary, Dean, IAAS

Prof. Choudhary, a noted agronomist, opined that there should be a functional linkage among research, extension and teaching for a meaningful outcome in agriculture. But in Nepal these three pillars of agriculture are not merged in a way that should be for the benefit of the country. He observed that our research, extension and education institutions are working in isolation. We don't have sufficient research fund in IAAS. If we have sufficient fund, we can produce qualified manpower from IAASs. IAAS don't have access to research done by NARC and vice versa. Our country is converted into food importing country from exporting country in the past. Few years back we were exporter of rice to neighboring state of India and China now the situation is quite reverse and we are importing from these countries. As a result, our dependency on agriculture production is increasing day by day. Years with more rainfall increase production whereas in non-favorable years we fail to harvest good crops. We should use water judiciously for agriculture, thus improve irrigation system. TU is basically a non technical university and cannot address the issues of IAAS related to agriculture R&D. We should improve agriculture in a coordinated way. What he urged that NARC should take lead to have research in IAAS system for in IAAS student from NARC are also enrolled for academic courses of higher study.

Closing remarks by Dr. MN Paudel, President, ASoN

Dr. Paudel summed up presentation of the key note address delivered by Ms Yamuna Ghale who highlighted about the ADS among the agronomists in the workshop. Likewise, the remarks given by Dr. DB Gurung, ED, NARC, Dr. MN Paudel, president, ASoN, Mr. DR Bhandari, Chief, SQCC, Mr. D Adhikary, secretary, seed enterprise association of Nepal (SEAN) and Prof. NK Choudhary, Dean, IAAS, Rampur, remained very informative and educative in the workshop. He thanked those dignitaries for making significant contribution in the workshop. Deliberation given by senior agronomists remained source of inspiration for fellow agronomist participating in the workshop. He

opined whole hearted help and support of participating institutions from public, private, donors, I/NGOs and professional institutions for making this workshop of ASoN a success. Also, he was very much thankful to DoA for providing venue, CDD, NARC, and SQCC for being part of the organizing committee of the workshop. In coming days also ASoN will be thrived in support of these institutions as well. He then declared the inaugural session closed until technical session resumes.

C. Technical session of the day I. : Chair person, Mr. DR Bhandari, Chief, SQCC, MoAD

In this session, seven technical papers were presented as outlined in the program schedules. After presenting technical papers there was question answer session. The presenter answered the queries raised by the participants.

When technical session was over, Mr. Bhandari gave chairperson's remark amalgamating gist of the session. He concluded that he, now in the capacity of senior agronomist, started his career as a production agronomist under NARC where he worked for 14 years. Now he boasts himself as being associated with research and whatever he is now it is due to his association with research in his start of career as a researcher. He asked fellow agronomists to follow research norms to understand agronomy of crops in agriculture R&D. He thanked all presenters for presenting nice papers and urged to dedicate efforts in coming days to make agronomy a science of helping reduce hunger and food insecurity in Nepal. He declared the session closed until tomorrow.

First session of the second day, July 15, 2013: Technical session

Chair person. Dr. Bhartendu Mishra, Senior agronomist/former ED, NARC

In this session, six papers were presented on different subjects as outlines in the program schedule. After the session there was discussion about the presentation. The presenters answered the inquisitive raised for their respective presentation. When first half of the technical session was over, Dr. Mishra, briefed about the papers delivered in the session. He was pleased to note that agronomists in the workshop presented up to date findings of their works. There is still room for improvement for learning is never ending process and it is the demand of the day that new challenges such as climate change, food insecurity, biotechnology and genetic improvements are key sectors to be considered seriously by agronomists in days ahead. He wished success of agronomists in their endeavor.

Second session of the second day:

GENERAL ASSEMBLY (GA) AND ELECTION OF NEW EXECUTIVE COMMITTEE OF THE ASON

Chair person. Mr. Mauje Lal Prasad Jaisawal, Founder Treasurer of ASoN

Mr. DR Bhandari, Chief Returning Officer of the ASoN Election Committee (EC), Dr. Bhartendu Mishra, and Mr. Bhoj Raj Sapkota, member ASoN, EC explained the way how election for new ASoN, Executive Committee (EC) is going to be held for the coming three years. Immediately after this, Mr. Jaisawal asked Ms. Dayamani Devi Gautam, treasurer, ASoN, to present audit report of the ASoN. The house approved the audit report. After this, Mr.Jaisawal declared present ASoN EC dissolved until new EC is elected by the GA.

There was proposition of 4 vice chairpersons and 2 secretaries in addition to the present 9 EC members of the ASoN. The house discussed this and rejected the proposal of addition of vice chairpersons and secretaries. The house did not agree to change composition of ASoN EC and approved the present number of ASoN EC.

At the same time, the house amended some of the provision of the constitutions of the ASON which Mr. Madan Thapa, preceding general secretary, proposed. The amendments of the ASON shall be incorporated as was agreed by the general assembly of the ASoN . The amendment shall be put in new edition of the ASoN constitution.

The GA unanimously elected new ASoN EC and advisers as follow:

President	Mina Nath Paudel, Ph D
Vice President	Suroj Pokhrel, Ph D
General Secretary	Hari Kumar Shrestha, Ph D
Joint Secretary	Nirmal Gadal, MS
Treasurer	Dayamani Devi Gautam, MS
Members	Chandra Kanta Khanal, B Sc Ag
	Rajendra Kumar Bhattarai, MS
	Lal Prasad Amgain, Ph D
	Bharat Prasad Devkota, MS
	Priyambada Joshi, MS
	Ramesh Raj Puri, MS
Advisers	Jagat Devi Rangit, Ph D
	Mauje Lal Prasad Jaisawal, MS
	Govinda Prasad Pandey, MS
	Bholaman Singh Basnet, MS
	Madhav Joshi, Ph D
	Bhartendu Mishra, Ph D
	Hari Bhandari, MS
	Dil Bahadur Gurung, Ph D
	Prof. Narendra Kumar Choudhary, MS

Mr. DR Bhandari, Election Officer, in presence of ASoN, EC and GA members convened oath of secrecy to the newly elected ASoN, EC members. He congratulated the new EC of the ASoN and wished grand success of this EC to make ASoN a vibrant organization in coming days.

Mr. Jaisawal expressed his happiness for being part of 8th ASoN workshop and was very delighted to see progress of ASoN for which he along with other founding members remembered days when ASoN was incepted in the Agronomy Division, Khumaltar. He declared 8th ASoN workshop closed until next workshop resumes.

The new ASoN, EC convened its first meeting under the chairmanship of Dr. Mina Nath Paudel in the election hall on 15th July 2013 (31 Ashad 2070) and thanked preceding EC members for successfully completing its tenure and handing over responsibility to new EC members. There were some other decisions made by the EC which will be circulated to the ASoN members from the google groups. Thus 8th ASoN workshop was convened by electing new EC and amending ASoN constitution on 31 Asdad 2070 (15 July 2013). This is a remarkable day in the history of ASoN.