

# कृषि शिक्षा, प्रसार तथा अनुसन्धानबीच समन्वयात्मक गोष्ठी

Workshop Proceeding



कृषि विकास निर्देशनालय, बागमती प्रदेश, हेटौडा

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## १. पृष्ठभूमि

कृषि क्षेत्रमा विकासको लागि शिक्षा र अनुसन्धानबाट प्राप्त प्रविधि र ज्ञान किसानहरू समक्ष प्रसार गर्नु महत्वपूर्ण हुन्छ । विश्वविद्यालयले सृजना गरेको शिक्षण प्रणालीमा टेकि नयाँ प्रविधिको विकास गरेर ती प्रविधिहरू किसान पुर्याई कृषि क्षेत्रको विकास गर्ने अबधारणा आधुनिक कृषि विकासको सुरुवात भए देखि नै भएको हो । नेपालमा निर्बाहमुखी प्रणालीलाई ब्यवसायिक कृषिमा रूपान्तरण गरि जिवनस्तर सुधार तथा खाद्य तथा पोषण सुरक्षाको माध्यम वाट देशको आर्थिक सम्बृद्धि हासिल गर्ने निरन्तरको नीतिगत तथा कार्यगत प्रयासहरू भए पनि हालसम्म पनि कृषि बिकासको आवस्था न्यून नै रहेको छ । यसै सन्दर्भमा अनुसन्धान, प्रसार र शिक्षा बीचको अन्तरसम्बन्ध प्रगाढ बनाई कृषि क्षेत्रको विकास गर्ने नीतिगत तथा कार्यगत प्रयासहरू निरन्तर भए पनि उपलब्धीमुलक प्रयासहरू हुन सकेको देखिदैन । देश संघियतामा प्रवेश गरिसकेको वर्तमान परिबेशमा तिनै तहको सरकार तथा कृषि र अनुसन्धान संग सम्बन्धित सरोकारवाला हरु बीच समन्वयको खाँचो इन् अधिक रहेको छ । संविधानले दिएका अधिकारहरूको उपयोग गर्दै तिनै तह एक-आपसमा समन्वय गरि किसानको हितमा काम गर्नु पर्ने दायित्व थपिएको छ । तर संघियता सुरु भएको ५ बर्ष बितिसकदा पनि यी तिनै तहका संरचनाहरू तालमेलको कमीले गर्दा सक्रिय भूमिका निर्वाह गर्न भने सकिरहेका छैनन् । कृषि क्षेत्रको विकासका लागि कृषि अनुसन्धान, कृषि प्रसार र कृषि शिक्षाको आपसी समन्वय तथा अन्तर-सम्बन्ध आवश्यक हुन्छ भन्ने अन्तराष्ट्रीय मान्यता रहेको स्थिति भए पनि नेपालमा यी तिन पक्षहरूको समन्वय तथा अन्तरसम्बन्ध राम्रो हुन सकेको देखिदैन । कृषि शिक्षा, प्रसार र अनुसन्धानमा तिनै तहका सरकारले आ-आफ्नो तवरले भूमिका निर्वाह गर्दै आएका छन् तर आपसी समन्वयको कमीले गर्दा चालिएका कदमहरू विफल हुँदै आएका छन् । तसर्थ, यी विषयहरूलाई मध्यनजर गर्दै दुई मुख्य उदेश्यका साथ यो गोष्ठी आयोजना गरिएको हो ;

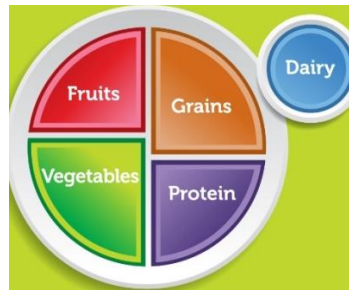
- क) संघीय संरचना तिनै तहका सरकारहरूबाट सञ्चालन गरिने कृषि विकासका कार्यक्रमहरूमा कृषि अनुसन्धान, कृषि शिक्षा, कृषि प्रसारका पक्षहरूको विश्लेषण गर्ने,
- ख) कृषि अनुसन्धान, कृषि शिक्षा, कृषि प्रसारका पक्षहरूबीच कसरी समन्वय कायम गरि तीन तहका सरकारहरूले सञ्चालन गर्ने कृषि विकासका कार्यक्रमहरूलाई प्रभावकारी तवरलमा संचालन गर्न सकिन्छ भन्ने प्रश्नको उत्तर खोज्ने

## २.कार्यपत्रहरू

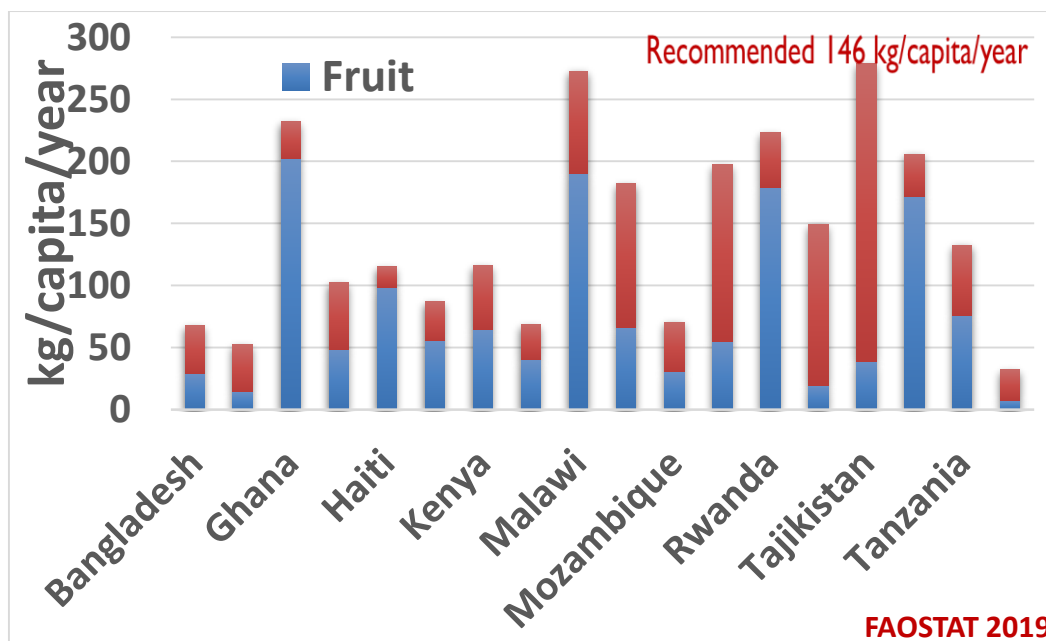
२.१.नविनतम कृषि प्रविधिहरूको प्रयोग मार्फत खाद्य सुरक्षा प्रवर्धनका लागि कृषि शिक्षा क्षेत्रको भूमिका, कृषि अनुसन्धान र कृषि प्रसारसँग सहकार्यका क्षेत्रहरू तथा सो सम्बन्धमा कृषि शिक्षा क्षेत्रको आगामी कार्यदिशा

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According to the World Food Summit (1996), the population is food secure when all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food which meets their dietary needs and food preferences for an active and healthy life. Based on this definition, food security involves four pillars—availability, access, utilization, and stability—acting as equally useful tools for food security analysis.



### **Fruit and Vegetable Consumption Gap**

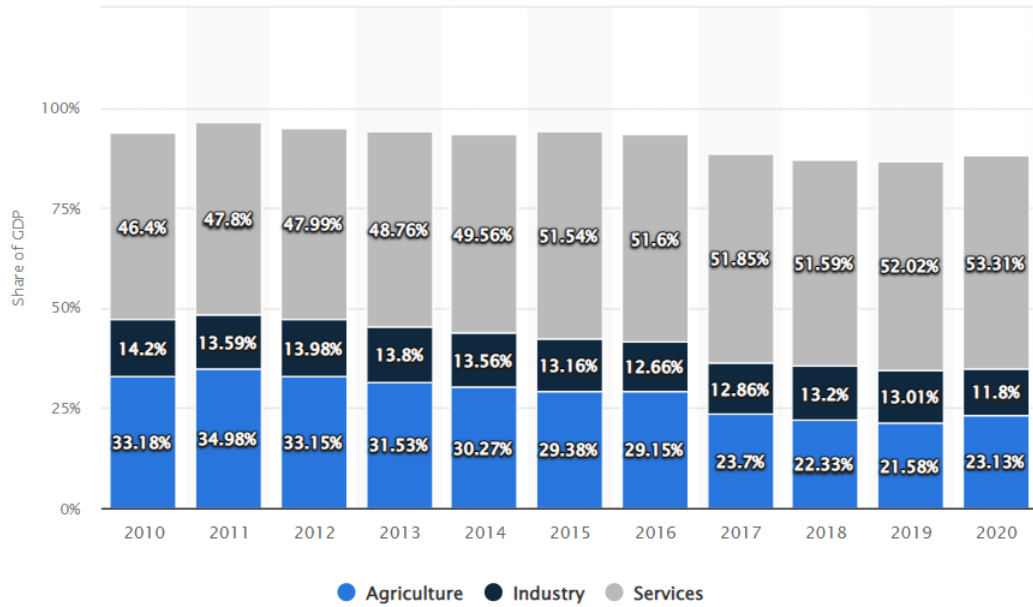


- Food security improved slightly compared to October 2021, but approximately **3.86 million people (13.2%) in Nepal were not consuming an adequate diet in June 2022.**
- About 3 % of households - did not have enough food; among these 63.3 % said that increasing prices of food was the main reason. Among all households, 78.2 percent listed increasing food prices as a main concern.
- Limited livelihood and economic opportunities; frequent natural disasters and social conflicts; inadequate market connectivity due to poor infrastructure; as well as regional heterogeneity, gender, caste inequality and so on are considered the reasons for food insecurity and malnutrition in Nepal.
- To achieve the goals of food security, food must be available to the individuals either by **domestic production, food aid, or international import.**
- The problem in the food [supply chain system and management](#) in Nepal is a disaster for both producers and consumers themselves.
- Likewise, improper warehousing and a lack of knowledge about the segregation of food in cold storage is another big issue resulting in the wastage of produced food.
- Thus, the lack of good governance in both domestic products and international imports has largely impacted the farmers and consumers of Nepal.

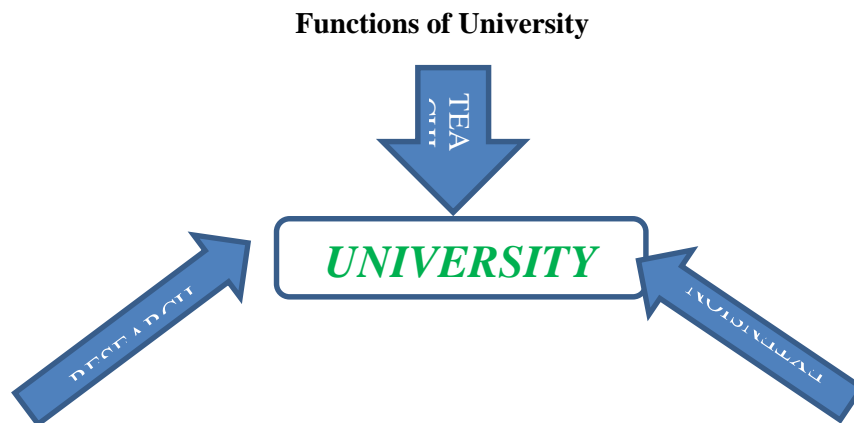
मध्य पहाडका हरेक जिल्लाबाट सिजनमा दैनिक हजारौ टन निर्यात गर्न कसले के गर्नु पर्ला ? लोन गरो !



- The World Bank defines the situation when the calorie intake remains under 1,800 per day per person as the severe food insecurity and according to the WB definition, 7.8 percent of total population face a greater risk of severe food insecurity in Nepal.
- An adult with normal health condition requires an intake of 2,200 calorie each day for an active life and the calorie consumption majorly depends on the availability of food.
- The **15th five-year plan in Nepal states that 21 percent population in Nepal has still no access to sufficient food.** It says that only 48.2 percent of the households are basically food secure.
- In Nepal two thirds of the population is dependent on agriculture.
- Yet, **we import billions of rupees worth of food grains from third world countries.**
- We have to change this course and for that **we need policy inputs from experts, development partners and active participation from private sector.**
- We have to ensure that the distribution system is more resilient, reduction of food loss and **increasing the investment from development partners, private and public sector, for research and development**



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### Major Research/ Extension Activities in University

- Faculty Research- National, International collaboration and funding agencies, University internal fund
- PhD Research
- MSc Research
- Undergraduate research
- Agriculture Science Centers in Land Grant Model

## AFU in Agriculture Development Strategy (2015-2035) ( includes it from ADS)

Table 2 Outcomes, Outputs, and Programs of the ADS

Outcome	No	Output	Program	
2. Higher Productivity	2.1	A decentralized extension system responsive to farmers and agroenterprises' needs	FLAGSHIP (DESTEP)	
	2.2	A decentralized research system responsive to farmers and agroenterprises' needs	FLAGSHIP (DESTEP)	
	2.3	A strengthened agricultural education system	FLAGSHIP (DESTEP)	
	2.4	A farming sector composed of adequately sized farms that use land efficiently and sustainably	CORE	
	2.5	Irrigated area expanded equitably and viably, and improved irrigation efficiency and management.	CORE	
	2.6	Timely access to quality agricultural inputs at affordable price.	CORE	
	2.7	Effective implementation of existing seed policies including Seed Vision 2013-2025 through sufficient investment in resources and capacity building, resulting in an improved and decentralized seed system providing timely access to quality seed at affordable price.	CORE	
	2.8	A pragmatic solution to fertilizer supply that is acceptable in the short-term, clearly indicates a strategy for the medium and long term, and aims at improving productivity.	CORE	
	2.9	A variety of improved animal breeds appropriate for the Nepal farming systems conditions are available to farmers.	CORE	
	2.10	A range of mechanization options accessible to farmers.	CORE	
	2.11	Improved resilience of farmers to climate change, disasters, price volatility and other shocks.	CORE	
	2.12	Sustainable farming, good agricultural practices (GAP), good veterinary animal husbandry practice (GVAHP) are established and adopted.	CORE	
	2.13	Subsistence production based forestry is developed into competitive, agriculture friendly and inclusive forest management practice, with a holistic and community based landscape approach to natural resource management and livelihoods improvement.	CORE	
	2.3	Strengthened agricultural education system		
	2.3.1	Improve facilities and capacity of Agricultural University		
2.3.2	Establish new Departments in Agriculture and Forestry University			
2.3.2.1	Establish Agribusiness Department			
2.3.2.2	Establish Technology Dissemination Department			
2.3.3	Support for joint educational and research programs			
2.3.4	Establish Agricultural University partner operations with private sector			
2.3.5	Establish new agricultural/veterinary science colleges in other regions			
2.3.6	Strengthen capacity of CTEVT			
2.3.7	Strengthen capacity of professional staff from government, educational system, and private sector through overseas higher education degrees and trainings.			
2.3.8	Mainstream food and nutrition security into existing agricultural education system			

### गहुको नया जात विकास (From 2016)

Stress adaptation aspects of wheat and develop wheat varieties for the marginal and stressful production environments of Nepal



**Developing novel technology for enhancing round the year breeding potentiality of buffaloes (*Bubalus bubalis*) in Nepal**

*AFU Long term research (2016/17-2021/22)*

**Objectives:**



Developing and validating the novel technology for obtaining round the year breeding success in buffalo based on the integrated approach of nutritional and management improvement, and selecting and applying hormonal protocols for timed artificial insemination (TAI)

Animal Health Camp, Gaushala, Mahottari  
12-14 Asar 2079



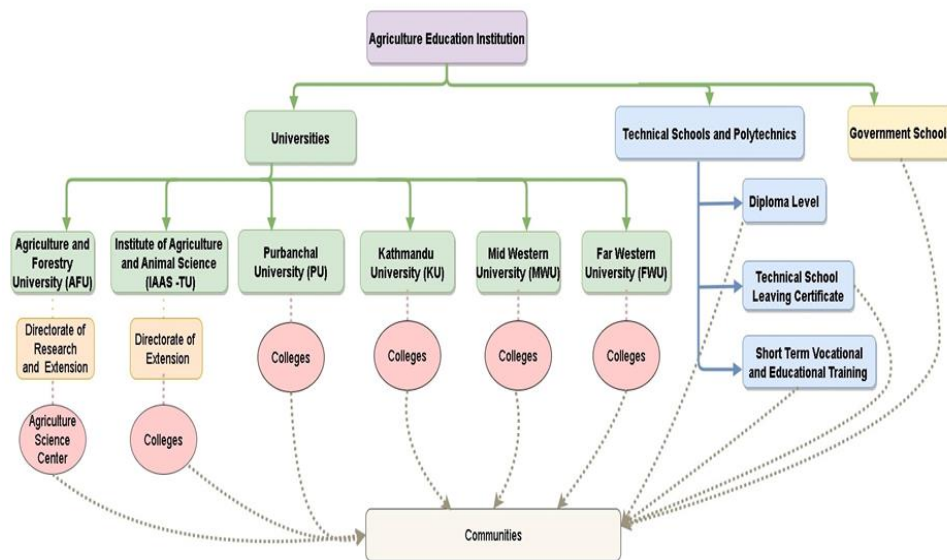
### Challenges in Broad Framework

- Weak linkages among research, farmer, extension, and education agencies
- Poor Extension Service- Inadequate extension personnel/Less professionalisms in extension/Current technical knowhow
- Resilience/Mitigating Effect of climate Change
- Distraction of rural youth in Agriculture
- Agriculture mechanization
- Land use policy

- Wide ratio between farmers and extension agents
- AFU/TU and similar organizations are also instrumental for extension services in Nepal (Babu & Sah, 2019)
- However, the institutional capacities of educational institutions are insufficient
- The non-formal education (extension service) function of education institutions and research organization have still been ignored
- University, CTEVT, and High School can be utilized for extension service throughout the country
- Through High school network we can reach each and every Household of community
- Above mentioned diverse nature of education institutions producing agriculture workforce will have added advantages in the planning, monitoring, implementing, and sharing of resources
- Technology transfer through education institutions is cost effective way to reach the Nepali framers

### Educational Institution Extension Services in Nepal

- Extension activities have always been seen as an integral part of the TU/IAAS e.g Agriculture development of Chitwan
- MUCIA developed IAAS with the belief that teaching, research, and extension are mutually reinforcing activities
- The vision of the IAAS offered a variety of non-formal education programs for adults and out-of-school youth
- AFU/DOREX-ASCs in different parts of Nepal-outreach stations
- Plant Clinics of AFU, Kishan Call Centre, seed village model of AFU were some of the initiatives
- AFU-PM-AMP-(LEE) program is one of the successful programs with integration of university, community, and government systems
- Veterinary Teaching Hospital of AFU and IAAS,
- Farm visit of several project-led activities has significantly solved the farmers' problem



**Fig: Educational Institutions in Nepal producing ag. Graduate**

आंगिक कलेजहरु — ८ संचालनमा (७- कृषि; १ वन)

१. प्राकृतिक श्रोत तथा व्यवस्थापन कलेज, पाखिबास, धनकुटा
२. प्रा.श्रो.व्य.क., मरिन, सिन्धुली
३. प्रा.श्रो.व्य.क., टिकापुर, कैलाली
४. प्रा.श्रो.व्य.क., पुरुन्चौर, कास्की
५. प्रा.श्रो.व्य.क., कटारी, उदयपुर
६. प्रा.श्रो.व्य.क., बर्दिबास, महोत्तरी
७. प्रा.श्रो.व्य.क., खजुरा, बाँके
८. प्रा.श्रो.व्य.क., माडीचौर, रोल्पा
९. प्रा.श्रो.व्य.क., दुल्लु, दैलेख

नेपाल सरकारको आ.व. २०७३/०७४ बजेट बक्तव्यको २२९ बुँदामा नेपाल भरि विभिन्न स्थानमा कृषि क्याम्पस खोल्ने नीति तथा कार्यक्रम र निर्देशन Kathmandu University, Far western University, Mid-western University, Madhesh Agriculture University, Nepal Army, Lumbini Buddha University

However, these new agricultural programs are running in isolation with less Coordination,



## ‘पहुँचको भरमा विश्वविद्यालय खुलिरहेका छन्’

0 COMMENTS

अहिले पहुँचवाला व्यक्ति अथवा समूह विश्वविद्यालय सञ्चालन गर्ने 'आइडिया' लिएर सरकारमा पुग्छन् । सरकारले तत्काल अगाडि बढाउने निर्णय गरिहाल्छ । अलिक पहुँच पुगेर भने मात्रै यो त विश्वविद्यालय अनुदान आयोग (युजीसी) मा पठाउनुपर्छ भनेर यता पठाइन्छ ।



## भएका अस्तव्यस्त, नयाँ-नयाँ विश्वविद्यालय खुल्दै

1.4k Shares

सरकारको न्यून लगानी र जथाभावी राजनीतिक नियुक्तिले भएका विश्वविद्यालय थला पर्दै गएका छन् भने प्रभाव र पहुँच प्रयोग गरेर नयाँ नयाँ विश्वविद्यालय खुल्ने क्रम बढ्दो छ । यतिसम्म कि सरकारका हरेकजसो मन्त्रालयसँग अहिले विश्वविद्यालय खोल्ने कार्यक्रम छ ।

### Student organizations in extension services

- IAAS/TU-Youth for Community Transformation (YCT),

- Creative Thinkers Society,
- Youth for Sustainable Agriculture
- AFU-Agriculture Student Liaison Forum (ASLF),
- Group of Agriculture and Veterinary Students (GAVS),
- Student’s contract farming during their leisure period provide demonstration effects for the farmers
- National Youth Council Nepal –AFU students monitoring visit is another example
- Nepal Veterinary Students Association (NVSA) effort are also farmers focused

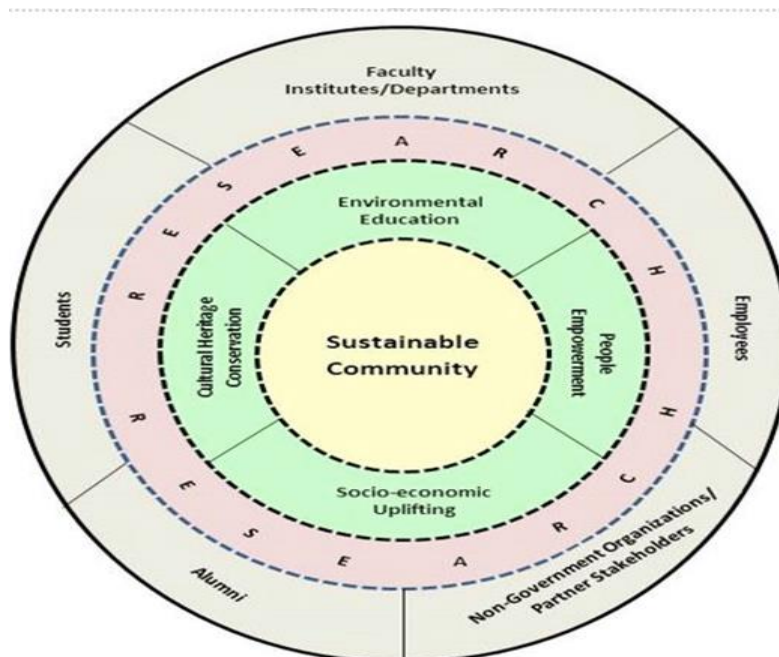


Fig: University-Community serves framework

### Program and Number of students in CTEVT Affiliated Program

Programs	Number of Students
Diploma in Agriculture (Plant Science)	4039
Diploma in Agriculture (Animal Science)	2549
Pre-Diploma in Livestock Production/ Animal Science	2415
Pre- Diploma in Agriculture (Plant Science)	3226

- School Sector Reform Plan-Ministry of Education has included agriculture courses in the school
- It is estimated to transform 1000 schools into model schools related to technical education, with a demonstration effect (MoE, 2016; MoE, 2009)
- Vocational stream at the secondary level (from grade 9) was introduced which will enable students to enter tertiary education after completing an additional one-year bridge course

- Study and Earning Program' targeting students as a model in some schools in all the states.
- Learning by Earning program under the Presidential Educational Reform Program.
- The total number of schools selected nationwide is 140, and agriculture and livestock rearing programs.
- A study in the Philippines shows that the farmers' children can perform the role of information mediators effectively (Manalo et al., 2019).
- A pandemic situation like COVID-19 and erupting food supply situation demand immediate recruitment of extension agents. In this situation, students can be hired
- AFU is sending students to Israel for training and work.
- However, government can utilize those students in Nepal instead of sending aboard.
- While working at the community level, student's gain real-field experience, develop leadership and problem-solving skills. Moreover, community service for students increases social awareness and responsibility as well.

### **International Experience of Educational Institution System Extension Services**

- USA-Land Grant University-State-1/2-Cooperative/county
- US Land Grant Universities suggest formulating agricultural policy for the US government (Timilsina, 2021)
- Netherland-based extension is fee-charging and university focuses on teaching and research
- The Wageningen University is a good example of the land grant model used in the Netherland, where the private sector is involved in extension services.
- Indian Land Grant University-Green revolution

### **Way Forward regarding the engagement of agri education institutes in extension service**

- Schools and CTEVT have massive networks
- The increased number of agricultural colleges- an opportunity for extension service delivery if properly planned.
- Yearly 2300 students enrolled in the university system
- AFU students who participated in LEE-program supported by PM-AMP have enriched their knowledge and skill and serve as extension agents.
- Thus, a model that addresses the integration of education institution in extension service is imperative to address the limited extension access of the farmers.
- NARC, DOA, DLS, AKCs, CTEVT, Schools, Veterinary Hospitals This will help to produce competent agriculturists and increase extension services.
- These overall challenges demand "New Agricultural Extensionist" and New Agriculture Extension strategy
- MOAD-province-AKC vs ASC-AFU?
- Most of KVK are under University system in India
- Merger-NARC and DOA
- What are the role of Academic institution in formulation of Federal, Provincial and local level policy?

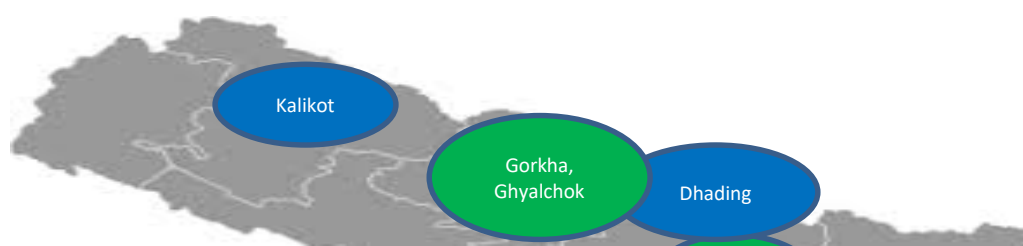
India Region

### **India now has 731 Krishi Vigyan Kendra (KVK)**

• March 16, 2022 Delhi Bureau 0 Comments 1 min read

There are 38 KVKs under the control of State Governments, 66 under ICAR Institutes, 103 under NGOs, 506 under Agricultural Universities, 3 under Central Universities, 3 under Public Sector Undertakings, 7 under Deemed to be Universities and 5 under Other Educational Institutions.

Agriculture Science Center (कृषि विज्ञान केन्द्र- २+२ )





#### कृषि शिक्षा, कृषि अनुसन्धान र कृषि प्रसारसँग सहकार्यका क्षेत्रहरू

- कृषि विद्यार्थी र प्राध्यापकलाई अनुसन्धान र प्रसार कार्यमा सहभागी गराउने, वैज्ञानिक र प्रसारविज्ञलाई अध्यापनमा सहभागी गराउने
- NARC/NARS, PMAMP, Province Ministry
- प्रदेश र स्थानीय सरकारको प्राथमिकताका क्षेत्रमा अनुसन्धान र प्रसार कार्यमा सहभागी हुने- वि.वि. र सम्बन्धित सरकार र समुदाय/ व्यवसायीको अनुसन्धान कोष
- E-Advisory Board in each province



कर्णाली प्रदेशसगको सहकार्य  
AGREEMENT DOCUMENT

Prepared

For the

Program Implementation

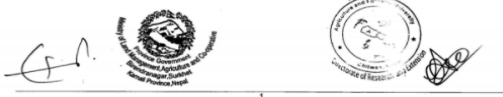
For the

Feasibility study of Potential Resource Centers, Agricultural Production Pockets and Market Centers in Karnali Province

For the

Ministry of Land Management, Agriculture and Cooperatives (MOLMAC), Karnali Province, Surkhet

February, 2020



Final Work Compliance Report on  
Feasibility study of Potential Resource Centers, Agricultural Production Pockets, and Market Centers in Karnali Province, Nepal

Submitted to

Ministry of Land Management, Agriculture and Cooperatives  
Karnali Province, Surkhet, Nepal  
molmacp6@gmail.com



Submitted by:

Directorate of Research and Extension  
Agriculture and Forestry University, Rampur, Chitwan, Nepal  
Email: scdhalakal@afu.edu.np



लुम्बिनी र बागमती प्रदेशसँग को सहकार्य

प्रदेश सरकार  
प्रदेश नं. ५  
भूमि व्यवस्था, कृषि तथा सहकारी मन्त्रालय  
स्मार्ट कृषि गाउँ कार्यक्रम  
(कार्यक्रम व्यवस्थापन कार्यालय)  
मुटवल, लुम्बिनी

ईमेल: sav.ministry2075@gmail.com  
फोन नं: ०३१-४५०२९६

पत्र संख्या: ०७६/०७७  
पसानी नं.: १०४४

मिति: २०७६/१०/२७

वी विरिचक ज्यू,  
Directorate of Research and Extension  
कृषि तथा वन विज्ञान विश्वविद्यालय  
रामपुर, चितवन।

विषय: सोपकार्य अनुसन्धान (Thesis Research and Survey) सम्पन्नपत्र।

प्रस्तुत विषयमा यस मन्त्रालयको आ. व. २०७४/०७६ बाट ५२ प्रदेश निर्वाचन क्षेत्रका ५२ स्थानहरूमा र आ. व. २०७६/०७७ बाट यस २५ स्थानहरूमा स्मार्ट कृषि गाउँ कार्यक्रम संचालन भएको व्यतिरिक्त अन्यका लागि गाउँहरूमा सोपकार्य अनुसन्धान (Thesis Research and Survey) गर्ने कार्यक्रम रहेकोले तयारीले उल्लेख भए अनुसारको समूह र संघको आधारमा विद्यार्थीबाट सोपकार्य सगउने प्रक्रिया अघि बढाउन आवश्यक सहयोगका लागि निवेदनगतर अनुरोध छ।  
(नोट: यस सम्पन्नपत्रा विस्तृत अध्ययनका लागि स्मार्ट कृषि गाउँ कार्यक्रम संचालन कार्यालयि २०७६ र स्मार्ट कृषि गाउँ संचालनी कार्यक्रम संचालन विधि, २०७६ पढी संचालनको वेबसाइट molmac.p5.gov.np बाट डाउनलोड गर्न सकिनेछ।)

तस्वीत १: सोपकार्य अनुसन्धान (Thesis Research and Survey) कार्यक्रम:

क्र. सं.	विषय/वाती	संख्या	तह	कैफियत	क्र. सं.	विषय/वाती	संख्या	उपस्थव्य गउउन सवने संख्या	कैफियत
१	बागमती	६	स्नातकोत्तर तह		५	माटो विज्ञान	२	स्नातकोत्तर तह	
२	बागमती	५	स्नातकोत्तर तह		६	बासप विज्ञान	१	स्नातकोत्तर तह	
३	वाती विकास/वाती प्रबन्धन	२	स्नातकोत्तर तह		७	कृषि प्रसार	१	स्नातकोत्तर तह	
५	एगू इको एण्ड माडेस्टिग	२	स्नातकोत्तर तह		८	वाती संरक्षण	२	स्नातकोत्तर तह	
					जम्मा		२०		

डा. पद्म शक्तिशर्मा  
(पशु विकास अधिकृत)  
सम्पर्क नं ९८२००२४७२२

सागर, जयपथर्षः  
मा. मन्त्रीज्यू, भूमि व्यवस्था, कृषि तथा सहकारी मन्त्रालय, मुटवल।  
श्रीमान्, सचिवज्यू, भूमि व्यवस्था, कृषि तथा सहकारी मन्त्रालय, मुटवल।

Website: molmac.p5.gov.np; Email address: sav.ministry2075@gmail.com



## कृषि शिक्षा क्षेत्रको आगामी कार्यदिशा

- The agricultural education in Nepal is extensively expanding.
- To date, various constituents and affiliated campuses of seven universities are providing agricultural education in different parts of the country including agriculture, veterinary science, fisheries, horticulture and forestry with the enrollment capacity of more than 2670 students (2382 in undergraduate level and 345 in post graduate level) in each academic year.
- However, these agricultural programs are running in isolation with less coordination among the institutions.
- Among different agriculture education providing institute/ universities, Agriculture and Forestry University (AFU), established in 2010, is the only university having teaching, research and extension as the mandatory function in this field.
- However, it is irony that the IAAS with its branch campuses in Lamjung and Paklihawa have been instrumental in producing agricultural graduates in Nepal prior to the establishment of AFU in its land grant model.
- So, the underlying threat is more possibility of quantity outweighing quality in agricultural graduates (esp the BScAg program) mainly because of the rapid and random private affiliation strategy of university.
- On the other hand, the number of students appearing in entrance examination is in decreasing trend in almost all the agriculture teaching institutes.
- There are serious existing internal and external problems in universities, institutes, and colleges in Nepal.
- So, the government should have clear policies and knowledge of how an agricultural university should operate and how much and what kind of resources it would need to run efficiently.
- We have to learn the ways to improve the agriculture sector by implementing the Land Grant University and College system.
- It seems that AFU wants to be established as Land-Grant University, whereas, on the other hand, it is aggressively providing affiliation to private college and also the university land for other purposes.
- However, establishment of AFU-Agriculture Science Center (ASC) in Palung, Makwanpur and Ghyalchok, Gorkha and process of establishing ASCs in other agro ecological zones/ provinces are crucial steps to give a flavor of community based Land-Grant University system.

### Way Forward; Agri Education

- Issue of liaison ministry in agriculture education,
- Merger of Agri education institutes????
- Establishment of agriculture council,
- Human resource need assessment,
- Entrepreneurship/Academia-Industry linkage-Talent Co creation Lab
- University Innovation Center
- New disciplines and course of agriculture in Nepal based market demand are pivotal while formulating the national policy of this sector.



## कृषि तथा वन विज्ञान विश्वविद्यालय ऐन, २०६७

प्रमाणीकरण र प्रकाशन मिति

२०६७/३३

सम्बत् २०६७ सालको ऐन नं. ३

### कृषि तथा वन विज्ञान विश्वविद्यालयको सम्बन्धमा व्यवस्था गर्न बनेको विधेयक

**प्रस्तावना** : देशको मेरुदण्डको रूपमा रहेको कृषि क्षेत्रको सर्वाङ्गीण विकास गर्न र कृषिको आधुनिकीकरण गर्दै ग्रामीण जनसमुदायको सामाजिक तथा आर्थिक स्तर उठाउन कृषि, वन, पशु विज्ञान जस्ता क्षेत्रसँग सम्बन्धित विषयको एकीकृत रूपले अध्ययन, अध्यापन र अनुसन्धान गराई मुलुकभित्रै उच्चस्तरको प्राज्ञिक तथा सीपयुक्त दक्ष जनशक्ति उत्पादन गर्न नेपाल सरकारको लगानीमा कृषि तथा वन विज्ञान विश्वविद्यालयको स्थापना र सञ्चालन गर्ने सम्बन्धमा आवश्यक व्यवस्था गर्न बाञ्छनीय भएकोले,

नेपालको अन्तरिम संविधान, २०६३ को धारा ८३ को उपधारा (१) बमोजिम संविधान सभाले यो ऐन बनाएको छ।

#### परिच्छेद-१

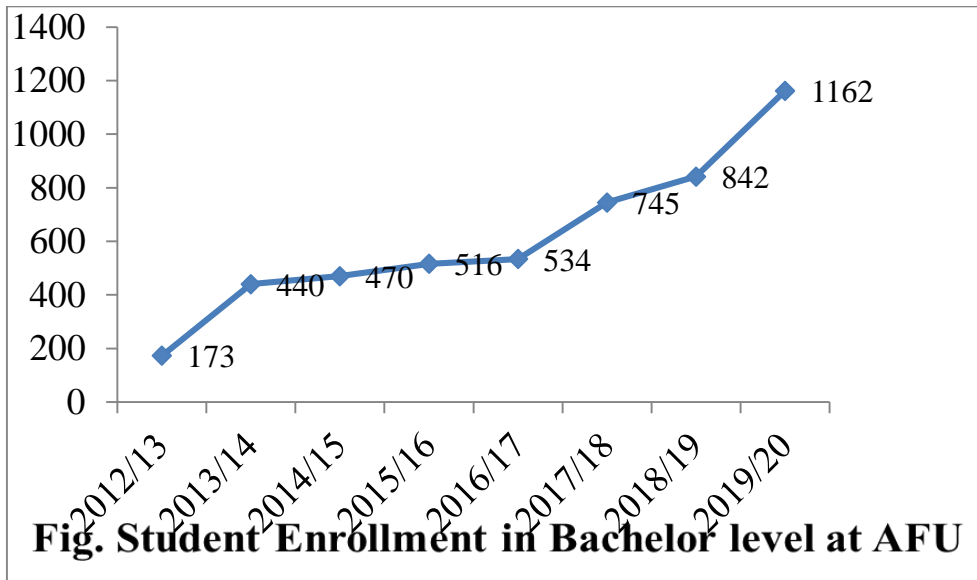
#### प्रारम्भिक

१. **संक्षिप्त नाम र प्रारम्भ** : (१) यस ऐनको नाम "कृषि तथा वन विज्ञान विश्वविद्यालय ऐन, २०६७" रहेको छ।

### Students enrollment in University

Degree	Universities						
	AFU	TU	PU	FWU	KU	MWU	Total
<b>Bachelor</b>							
Agriculture	1054	554	288	100	50	50	2096
Veterinary Science and Animal Husbandry	50	40	96	-			186
Fisheries	20	-	-	-			20
Horticulture and Floriculture	-	30	-	-			30
<b>Sub-Total</b>	<b>1124</b>	<b>624</b>	<b>384</b>	<b>100</b>	<b>50</b>	<b>50</b>	<b>2332</b>
<b>Master</b>							
Agriculture	122	72	-	-			194
Animal Science	18	16	-	-			34

Veterinary Science	40	24	-	-			64
Fisheries	9	8	-	-			17
Agribusiness	6	-	30	-			36
<b>Sub total</b>	<b>195</b>	<b>120</b>	<b>30</b>	<b>-</b>			<b>345</b>
<b>Total</b>	<b>1319</b>	<b>744</b>	<b>414</b>	<b>100</b>	<b>50</b>	<b>50</b>	<b>2677</b>



# Prospects of Establishing a Land-Grant University Model: Policy Paper on the Agriculture and Forestry University of Nepal

April 2019

*Authors:*

Dr. Abhoy Kumar Das  
Dr. Kailash Nath Pyakuryal  
Dr. Moha Dutta Sharma  
Dr. Bishnu Raj Upreti

*Editors:*

Dr. Rebecca J. Williams  
Dr. Naba Raj Devkota  
Dr. Adegbola Adesogan



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INSTITUTE



**UF IFAS**  
UNIVERSITY of FLORIDA

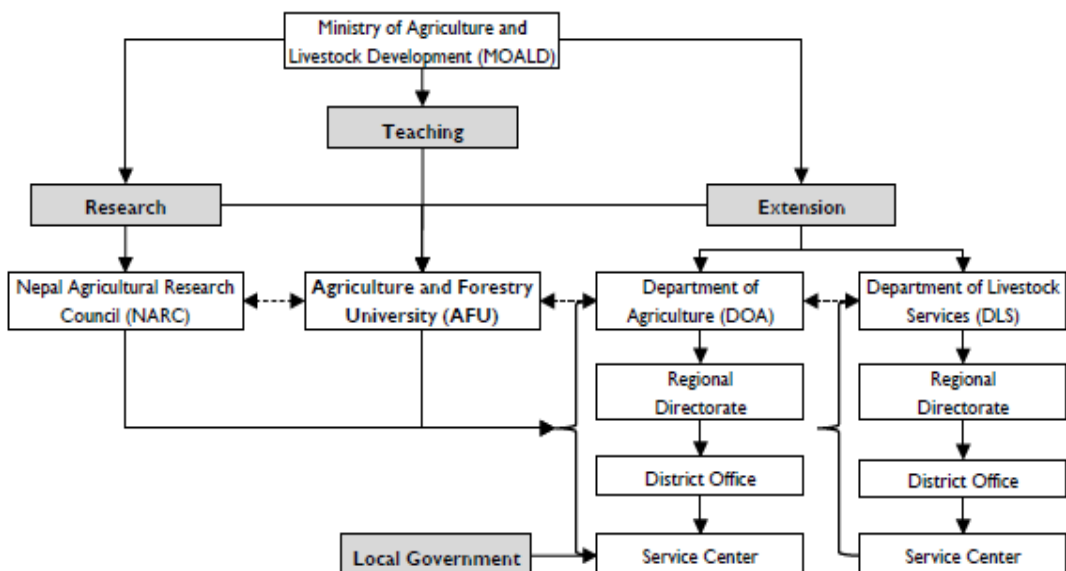


Figure 1: Comprehensive RTE Model of Institutional Relationships with Horizontal Linkages

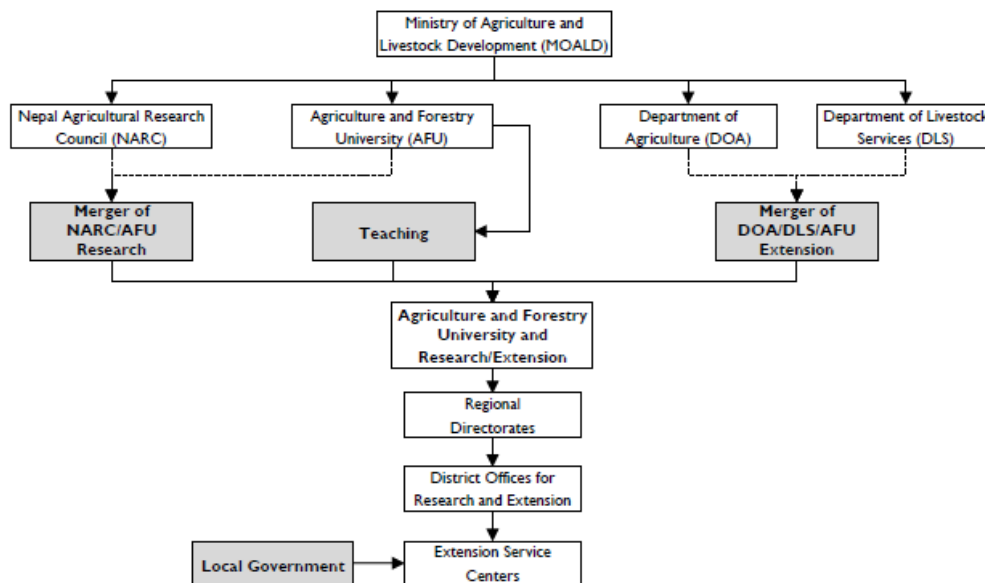


Figure 2: Comprehensive RTE Model of Institutional Relationships with Vertical Linkages

- Currently, AFU is not able to meet its role as a pre-eminent land grant university with a research, teaching, and extension mandate.
- The current funding structures, policies, and institutional arrangements come in conflict with the mandate given to AFU and their relationships with other actors who are conducting similar activities – particularly NARC, DOA, and DLS. If Nepal is to become a food secure country, the role of AFU in research and extension must be clarified and supported at the policy and institutional level.
- This document outlines several recommendations for discussion by stakeholders in agriculture, livestock, and forestry. These recommendations are not exhaustive but are a starting point for important discussions and debates that must occur if AFU is to meet its mandate. Furthermore, this document provides information for stakeholders, policy makers, and planners to understand the current challenges that AFU faces and changes that must occur for AFU to meet its legal mandate.

**The recommendations put forth in this document include:**

- Clarify the laws governing the roles and responsibilities of AFU, NARC, DOA, and DLS.
- Establish the role of AFU as an agricultural land grant institution in Nepal including the model that best meets the needs of the Nepali people, the changed structure of the Nepali governments, and the institutional arrangements as they currently exist or will be changed.
- Restructure the existing institutional arrangements between AFU, NARC, DOA, and DLS according to changes in policies and the established role of AFU as a land grant institution.
- Develop the appropriate regulatory bodies to oversee the quality of research, teaching, and extension activities in Nepal.
- Establish government support of public-private partnerships and how this can contribute innovation and extension in agriculture, livestock, and forestry.

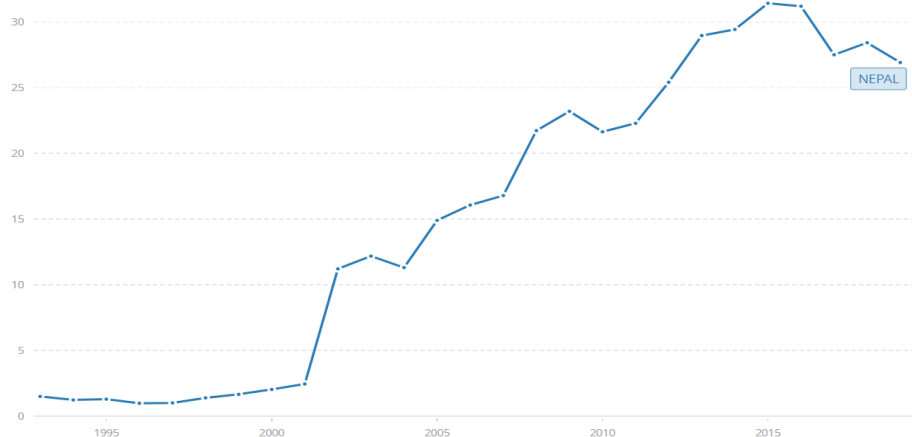
## २.२.Coordination and collaboration between three tires of government in extension service delivery

**Dr. Ram Krishna Shrestha, Joint Secretary and Chief  
Centre for Crop Development and Agrobiodiversity Conservation**

### Outline of the presentation

- Background- issues and challenges around agri. food sector
- Extension service delivery in the federal context
  - International context
  - Constitutional provision
  - Changes in extension service delivery following organizational restructuring
  - Emerging issues and challenges in extension service delivery
- Way forward

### Remittance based economy?



26.9%

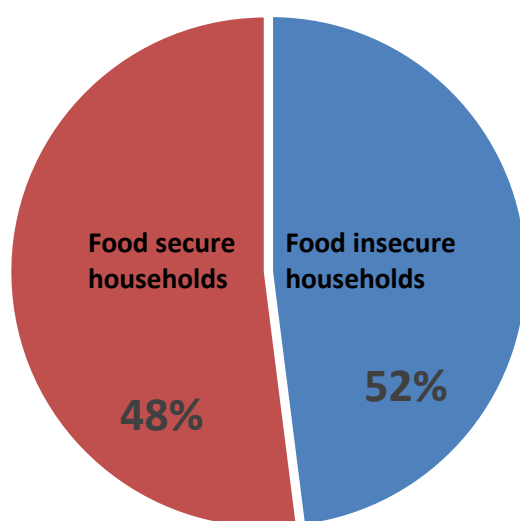
Figure. Personal remittances, received (% of GDP)  
(Data source: World Development Indicators, World Bank)

### Status of food security

<b>Global Hunger Index (2022)</b>	<b>81<sup>st</sup> (121 countries)</b>
<b>Global Food Security Index (2018)</b>	<b>79<sup>th</sup> (113 countries)</b>

Note: 4.6 million populations in the state of food insecurity

### State of food security



State of food insecurity	% of households
Generally food insecure	20
Moderately food insecure	22
Severely food insecure	10

Province	% of food insecure households
Karnali	17.5
Far Western	13
Madesh	10.7

S. N.	Geographic region	Area (%)	Population (%)	Food secure households (%)	Severely food insecure households (%)
1	Mountain	35	7	34.4	14
2	Hill	42	43	46.8	10
3	Terai	23	50	51	9.2

Source: Nepal Demographic and Health Survey, 2016

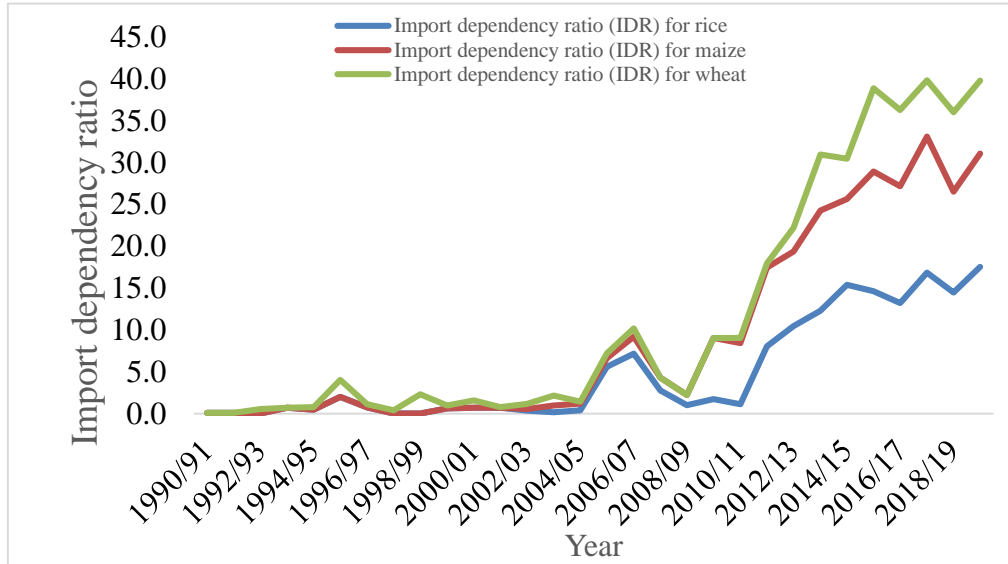
#### Current state of malnutrition

S. N.	Food security and nutrition related indicator	Current situation
1	Population of children under five are stunted *	36%
2	Population of underweight children under five years*	27%

3	Newly born baby with low birth weight *	21%
4	Population of anemic women*	41%

\*Nepal Demographic and Health Survey (NDHS), 2016

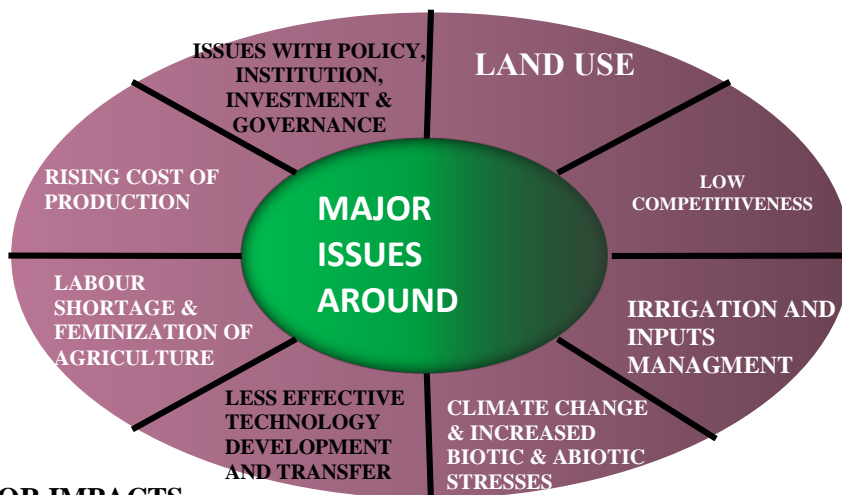
**Import dependency ratio of major cereals in Nepal over three decades**



(Gairhe, S., D. Gauchan, and K.P. Timsina. Forthcoming. Temporal Dynamics of Rice Production and Import in Nepal. Journal of Nepal Agricultural Research Council, Volume 7)

**Current agriculture and food system is facing unprecedented challenges.....**

**MAJOR ISSUES AROUND THE AGRICULTURE SECTOR**



**MAJOR IMPACTS**

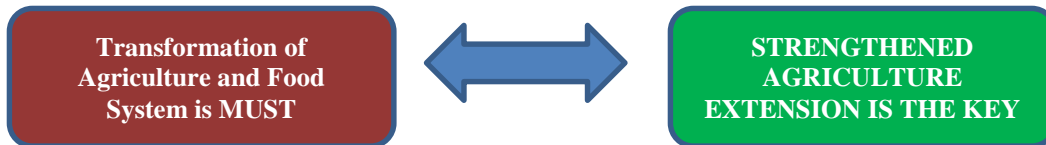
- Increasing trend of farmers quitting farming
- Increased agri. food import
- Country’s entire agriculture system is seemingly slipping out of our hands



**Business as usual scenario.....**

- Increase in food insecurity leading to food crisis
- Increased hunger and malnutrition
- Poverty and impoverishment will continue
- Internal conflict, social unrest and chaos
- National security, integrity and sovereignty could be compromised

**Agriculture sector must perform better to reverse the business as usual scenario.....**



**Extension service in Nepal- a reality check....**

- Extension and advisory services play an important role in increased farm production and productivity, and enhanced farm income and livelihood of farm families.
- Public sector is the main player of agriculture extension in Nepal with only limited role and presence of other actors such as private sector and NGOs. However, the role of private sector has been growing in recent decades
- Nationwide presence of public extension has helped in technology transfer, productivity gains and agriculture commercialization
- Scholars also argue that quality extension services in Nepal are beyond the access of many farmers (Subedi & Ghimire, 2015)
- ADS (GoN, 2016) suggests that public extension services has been grossly inadequate in terms of coverage and quality of service
- The agriculture extension in Nepal has gone through several changes since the beginning in terms of scope, approach, organizational capacity, and so on.

**Major changes in recent decades**

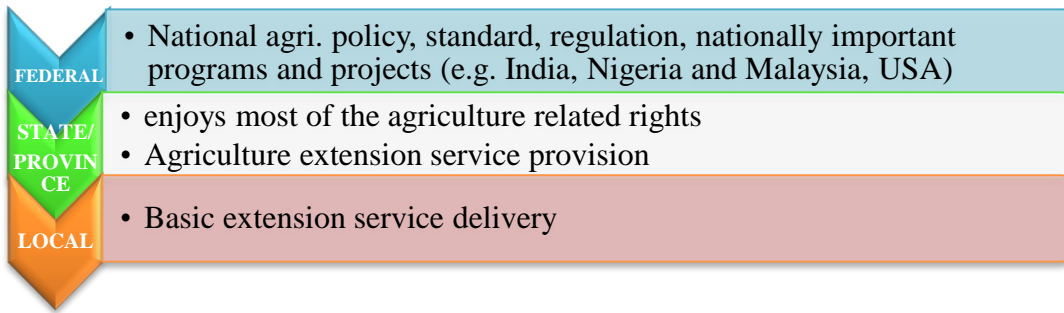
- Farmer to farmer extension
- Farmers Field School
- Utilization of Local Resource Person
- Devolution of extension service
- Introduction of competitive grant system (CGS)
- Massive restructuring of extension organization in the aftermath of federalization of the country

**Extension services in the federal context**

Agriculture service delivery system in some federal countries (the US and some developing countries - Philippines, Nigeria, Malaysia, South Africa and India)

**Agriculture rights of different governments**





## **Role of different governments for extension service delivery**

### **A. FEDERAL GOVERNMENT**

- National agriculture/extension policy
- Agriculture research and development
- Training and capacity building
- Co-funding agriculture extension and subsidies
- National flagship program/project
- Standard and quality control

### **B. PROVINCIAL/STATE**

- Extension service provision
- Extension funding
- Extension manpower
- Coordination with other actors

### **C. LOCAL GOVERNMENT**

- Extension service delivery
- Extension funding
- Extension manpower

## **Agriculture governance in India**

- Agriculture development in India is basically a state subject.
- The Union/Central Government's role
  - ✓ formulating agriculture policies
  - ✓ providing road map through its policies, programs and budgetary support
- The State Government's role
  - ✓ Implementation of the national level programs through its various departments
  - ✓ formulating region specific development programs

### **Indian Council of Agricultural Research (ICAR)**

- An apex body at the national level that supports research and extension activities
- The role of State Agricultural Universities

- ✓ develop extension models suitable to take up transfer of technology
- ✓ Implementing the models evolved by ICAR system.
- Agriculture research and extension system in India is dominated by the public sector and is led by the Indian Council of Agriculture Research (ICAR)
  - Agriculture extension in India is both centre as well as state affairs
  - Around 55.4 per cent of the total public funding for agriculture research and extension comes from the centre and 44.6 per cent by states.
  - Krishi Vigyan Kendras (KVK) is a major player

**Agriculture related rights of federal, provincial and local levels in Constitution of Nepal**

Schedule	No.	Rights
5	18	International trade, exchange, port, quarantine
6	20	Agriculture and livestock, factory, industrialization, business and trade, transport
7	9	Medicine and pesticides
8	15	Agriculture and livestock, agriculture production management, animal health, cooperative
	18	Management, operation and regulation of agricultural extension
9	4	Agriculture

- Central policy, projects, central statistics, intellectual property rights, insurance policy, land use policy, cooperative regulation etc. as federal rights
- Federal level is given a number of rights as per the unbundling of Schedule of rights

**Federal rights as per the unbundling of concurrent rights from Schedule 9 of the Constitution**

- Agriculture related national policy, legislation, standard and regulation
- National standard and regulation of agriculture related biodiversity and bio-technology
- Collaboration and coordination with agriculture related bilateral and multilateral organizations
- Agriculture related national statistics system, studies and research, resource conservation, development and dissemination
- Internationally accredited agriculture and food laboratories development and management
- Facilitation and regulation of agriculture and food related international trade
- Coordination and regulation of supply of imported fertilizers
- Controlling agriculture and livestock related international epidemics
- Setting veterinary related national policy and standard
- Registration of veterinary doctor, licensing, renew, cancelation and regulation
- Agri. industrialization, inter provincial development & promotion of livestock industry & trade
- National standard and regulation of seeds and breeds
- Policy, legislation and regulation of cross border grazing and pasture land
- National food security, food rights and food sovereignty

**Major functions of federal units**

**Major functions of MoALD and underlying units**

- Agriculture related national policy framework and standard

- Quality control and regulation
- International collaboration
- Fertilizer import
- Quarantine
- Arrangement for the implementation of constitutional provisions and related provisions
- Capacity building of lower level of government
- Formulation and implementation of national Mission on strategic crops/commodities
- National centre act as 'Centre of Excellence'

### **Major functions of provincial units**

#### **MoLMAC**

- Provincial agriculture policy, directives and budgetary management
- Overall direction, control and management of provincial agriculture development programs

#### **Agriculture Development Directorate**

- Planning and budgeting of provincial agriculture development programs
- Overall implementation of provincial programs

#### **Agri. Business Promotion Support and Training Centre**

- Agri. Business development service
- Agri. Business incubation service
- Agri. Business development training and capacity building

#### **कृषि व्यवसाय प्रवर्द्धन सहयोग तथा तापिम केन्द्रको कार्यविवरण**

- प्रदेशस्तरका कृषि उद्यमी तथा व्यवसायीहरूको रोष्टर तयार तथा अद्यावधिक गर्ने,
- कृषि उद्यमी तथा व्यवसायीहरूलाई व्यवसाय संचालनका लागि आवश्यक पूर्वाधार तथा सुविधाको पहिचान गरी आवश्यक कार्यक्रम संचालन गर्ने,
- कृषि उद्यमी तथा व्यवसायीहरूलाई व्यवसाय संचालनका लागि आवश्यक व्यवसायिक योजना तयारीमा सहयोग गर्ने,
- कृषि उद्यमी तथा व्यवसायीहरूलाई व्यवसाय संचालनमा आवश्यक सेवा सुविधा प्राप्तिका लागि सम्बन्धित निकायहरूसंग सम्बन्ध स्थापित गराइदिने,
- विभिन्न कृषि उद्यम तथा व्यवसाय संचालनका लागि आधारभूत जानकारीहरू प्रदान गर्ने,
- कृषि उद्यम तथा व्यवसाय प्रवर्द्धनसंग सम्बन्धित निकायहरूबीच समन्वय कायम गर्ने,
- विदेशवाट फर्केका कृषि व्यवसाय तथा उद्यम गर्न चाहने युवा कृषकहरूलाई उद्यम तथा व्यवसाय संचालनमा आवश्यक सहजीकरण गर्ने,
- तोकिएको शुल्क लिइ अन्य निकायवाट माग भइ आए बमोजिम कृषि उद्यम तथा व्यवसाय संचालन एवं प्रवर्द्धन सम्बन्धी तालिमहरू संचालनको व्यवस्था गर्ने,
- कृषि उद्यमी तथा व्यवसायीहरूलाई व्यवसाय संचालनका लागि आवश्यक ज्ञान तथा सिप प्रदान गर्न तालिम आवश्यक पहिचान गरी सो अनुरूप तालिम कार्यक्रम संचालन गर्ने ।

#### **Major functions of provincial units**

##### **Crop/commodity specific farm/centre**

- Resource centre
- Technology dissemination
- Training and capacity building of local level staffs and commercial farmers/entrepreneurs
- Identification, collection and conservation of agri. genetic resources

#### **Agriculture laboratories**

- Laboratory services
- Quality control

#### **Agriculture Knowledge Centre**

- Specialized and expert service
- Technology dissemination
- Capacity building of local level agri. Staffs

### **कृषि ज्ञान केन्द्रको कार्यविवरण**

- स्थानीय समस्यामा आधारित स-साना अध्ययन परिक्षण तथा भ्यालिडेशन परीक्षण सन्चालन गर्ने,
- माटो तथा मल, बाली संरक्षण र वीउविजन परीक्षण सम्बन्धी सामान्य प्रयोगशाला सेवा,
- नविनतम् कृषि प्रविधि प्रसारको लागि आवश्यक कृषि प्रसार शैक्षिक कृष्याकलाप सन्चालन गर्ने,
- प्रदेश र स्थानीय तहमा कार्यरत प्राविधिक तथा व्यवसायिक कृषक र व्यवसायीहरूको लागि कृषि पशुपंक्षीसंग सम्बन्धित विशिष्टीकृत ज्ञान शीप प्रदान गर्न एडभान्स तालिम सन्चालन गर्ने,
- स्थानिय तहको क्षमताले नभ्याउने प्रकृतिका विशेषज्ञ प्राविधिक सेवा टेवा,
- प्रदेश अन्तर्गत सन्चालन हुने संघिय कृषि विकास कार्यक्रम, आयोजनाको समन्वय तथा सम्पर्क विन्दुको रूपमा कार्य गर्ने,
- प्रदेश सरकार मार्फत सन्चालन हुने कृषि विकास कार्यक्रम, आयोजना सन्चालनमा प्रदेश सरकारलाई सहयोग गर्ने,
- कृषि आर्थिक महत्वका स्थानिय कृषि जैविक विविधताको पहिचान, संरक्षण र उपयोग गर्ने,
- नेपाल कृषि अनुसन्धान परिषदको बाह्य अनुसन्धान स्थल (Outreach Site) को रूपमा कार्य गर्ने,
- वीउ विजन तथा उन्नत नक्षको लागि स्रोतकेन्द्रको रूपमा कार्य गर्ने,
- स्थानीय तह र कार्यरत जनशक्तिको क्षमता विकास सम्बन्धि कार्य,
- बहु स्थानीय तह समेटि कार्यान्वयन हुने संघिय आयोजनाहरूको सन्चालन र नियन्त्रण,
- प्रधानमन्त्री कृषि आधुनिकीकरण परियोजना अन्तर्गत कमाण्डक्षेत्र भित्रका पकेट, ब्लक, जोन तथा सुपरजोनहरूको लागि प्राविधिक सेवा टेवा,
- एग्रो इकोलोजिकल जोन अनुसारको प्राथमिकता प्राप्त बाली बस्तु विकासको योजना, मूल्य अभिवृद्धि श्रृंखला विकास तथा कार्यान्वयनको समन्वय
- कृषि स्नातक तथा जे.टी/जे.टी.ए कोर्ष अध्ययनरत विधार्थीहरूका लागि इन्टर्नसिप कार्यक्रम संचालन,
- स्थानिय तहका कृषि विकासका इकाइहरूबाट कृषि सम्बन्धि तथ्याँक सँकलन तथा अध्यावधिक गर्ने । साथै सँकलित तथ्याँक प्रदेश र संघिय तालुक निकायहरूमा पठाउने,
- आफ्ने कमाण्ड क्षेत्रभित्र कृषि उद्यम तथा व्यवसाय सन्चालन गर्न चाहनेहरूको लागि व्यवसाय विकास सेवा उपलब्ध गराउने,
- किसान कल सेन्टर सन्चालन गर्ने,
- मोबाइल प्राविधिक सेवा प्रदान गर्ने,
- समग्र कृषि विकासको विषयमा प्रदेश र स्थानीय तहबीच पुलको काम गर्ने ।

## **Major functions of local level agri. units**

### **Agri. Development Section**

- Local level agri. Development plan, policy, programs and budget formulation and implementation
- Agri. related legal framework and regulation
- Management of supply and distribution and quality control
- Management of basic extension services

### **Agriculture Service Centre**

- Technology transfer at community level

## **Technical manpower under three tiers of government**

- Local level units = 3012
- Provincial units = 1119
- Federal units = 378
- Total = 4509

## **EXTENSION SERVICE DELIVERY IN FEDERAL CONTEXT**

(Basic features, trends, interaction among the extension units, impact, issues and way forward)

- most of the basic extension functions have been vested on the local level government as per the constitution.
- Accordingly, a massive organizational restructuring within then MoALD has divided prior extension units into federal, provincial and local level units.
- The functional vertical linkage previously existed in different layers, between centre to grassroots of extension administration has been ceased or terminated.
- Mixed results of change in extension service delivery system

## **Contemporary situation and issues in extension service delivery**

### **Coverage**

- About one-fourth farm households have been covered by extension program (Ghimire et al, 2021).
- poor in terms of geographic area and categories of farmers served (FAO, 2014, Shrestha & Sanjel, 2018).
- The ratio of frontline extension agent to farm families was almost 1:1200 in 2018 which is very high also given the remoteness and difficult terrain of the country.
- Large mass of poor, marginal and landless farmers have not been adequately reached (Shrestha & Sanjel, 2018).
- Women in Nepal are shouldering the farming but front-line extension workers are mostly men (Subedi & McNamara, 2012)

### **Service quality**

- Lack of service standards in agricultural extension service delivery (GoN, 2016)
- Extension and advisory services are heavily production technology oriented.
- Extension service in general lacks suitable technology to be transferred to farmers and agribusiness operators (Subedi & McNamara, 2012).
- areas such as use of ICTs, value addition and agribusinesses, producing safe foods, climate change adaptation and agro-biodiversity conservation are generally not getting priority.
- Generally blanket approach is followed in technology transfer without much regard to different needs of different categories of farmers and agro-ecological regions (Subedi & McNamara, 2012).

### Extension teaching methods

lack of standards in extension methods (GoN, 2016)

- Treatment of the message is often poorly matched with educational level and background of the clients.
- Subject Matter Specialist (SMS) concept and practice, specialized extension fading away

Current state of and issues with the extension service

Features/attributes	Current situation
Coverage of extension service	<ul style="list-style-type: none"> <li>• more frontline extension units (agri section/Agri. Service Centre) than in the past</li> <li>• Such units are nearer than the past</li> <li>• Poor real coverage due to relatively low extension worker to farmers ratio, unfilled vacant positions of frontline extension workers</li> </ul>
Basic features of extension service	<ul style="list-style-type: none"> <li>• Agri. extension teaching methods hardly practiced these days</li> <li>• Weak technology transfer</li> <li>• Handouts distribution, subsidy administration</li> <li>• Other basic extension functions and services not receiving priority</li> <li>• Extension service hardly addresses new and emerging challenges and issues such as climate change, loss of agrobiodiversity, nutrition, sustainable use of natural resources, protecting the interest of small and marginal farmers, and so on</li> </ul>
Equity	<ul style="list-style-type: none"> <li>• Better off and influential farmers are blamed to have more leverage to government subsidy and supports</li> <li>• Majority of landless and marginal farmers complain about having a poor access to subsidy and supports</li> </ul>
Capacity of extension service providers	<ul style="list-style-type: none"> <li>• Weak staff strength and capacity, and poorly equipped for providing need based and demanded technologies</li> <li>• Frontline extension workers have a poor human and social skills</li> <li>• Lack of need based technologies</li> <li>• Poor use of ICTs in extension</li> </ul>
Technology/message	<ul style="list-style-type: none"> <li>• Largely supply push, poorly need and demand driven</li> </ul>
Use of ICT and digital technology	<ul style="list-style-type: none"> <li>• Poor use and capacity of using cutting edge digital/disruptive technologies</li> </ul>
General competency of extension worker	<ul style="list-style-type: none"> <li>• Low competency</li> <li>• Generalist</li> <li>• Does not match with the information need of innovative farmers and entrepreneurs</li> </ul>

### Current issues around extension service provision

- Front-line extension service is marred by severe lack of technical manpower (extension staff) in local extension units (Agri. Section of Palikas) and provincial AKCs

- Almost all units of agriculture in all the three tiers of government are running under- staffed
- Extension and advisory services not getting proper policy and funding priority at provincial and local levels
- Provincial and local level programs are heavily loaded with subsidies and handouts distribution rather than improving extension and advisory services
- Small farmers and entrepreneurs are facing problems in getting extension and advisory services for they used to get in the past
- Due to absence of direct vertical linkage between various agriculture development/extension units under different governments technology transfer and feedback process has been severely affected
- Due to lack of linkage and coordination mechanism, implementation of national policies and programs have become uncertain and have also been negatively affected
- Capacity building of technicians and helping them stay updated with latest technologies has been severely hampered
- Collection and verification of production forecast and various other agricultural statistics have been seriously affected
- The present situation adversely impacting on the overall performance of the agriculture sector

### **Agricultural service delivery system at crossroads**



### **WAY FORWARD**

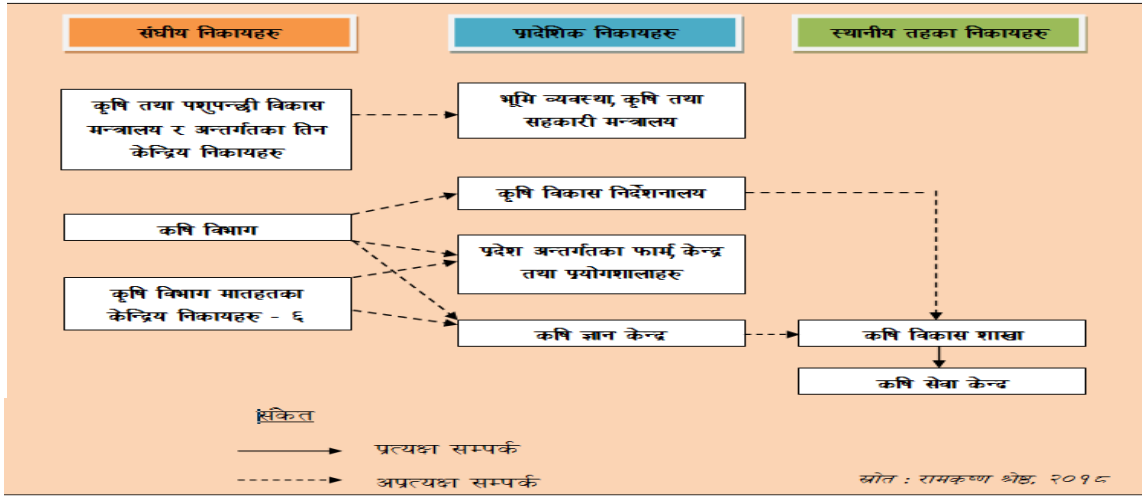
#### **1. Improve coordination between three tiers of government**

- Clear-cut delineation of rights, role and responsibilities as per the constitution
- Division of programs/activities to be carried out by the extension units under the three tiers of governments to avoid duplication of program and resources
- Federal government provides a broad framework of extension service provisioning
- Try and find ways to achieve uniformity in program standard and expenditure norms
- Provision the mandatory direct linkage and feedback mechanism between the relevant units working under different governments

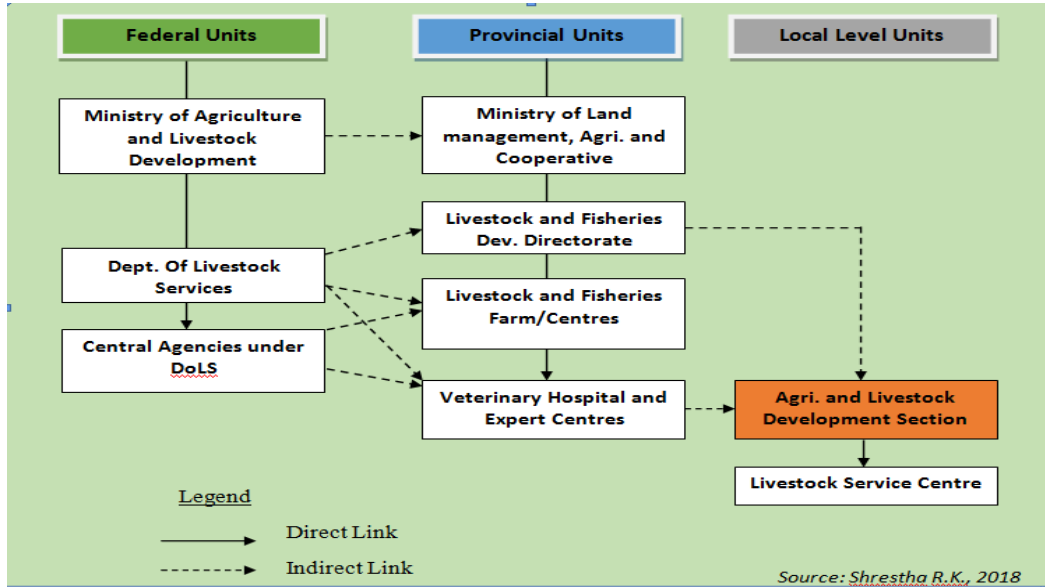
#### **Improving linkage and coordination between the agri. Units under the three tiers of government**

1. Suggested linkage mechanism
2. Suggested coordination mechanism
3. Other alternative arrangements for service delivery

## 1. Suggested linkage mechanism between agriculture development/extension units under different governments



## Linkage mechanism between livestock development units



## Chapter 20 of the Constitution

Federal, provincial and Local level linkage

- Basis- Collaboration, Coordination, Co-existence and Mutual cooperation
- Provision of inter-province council (article 232) and other provisions to fostering coordination between
  - i) Federal to province
  - ii) Province to province
  - iii) Province to local levels
  - iv) Federal- province- local levels

संघ, प्रदेश र स्थानीय तह ऐन (समन्वय तथा अन्तरसम्बन्ध), २०७७

- राष्ट्रिय समन्वय परिषद
- विषयगत समिति
- प्रदेश समन्वय परिषद



- प्रदेश र स्थानीय तह तथा अन्तर स्थानीय तहबीचको अन्तरसम्बन्ध

### Coordination mechanisms for agriculture development/extension

#### 1. Federal and Provincial Agriculture Steering Committee (संघ र प्रदेश कृषि विकास निर्देशन समिति)

- संघीय कृषि तथा पशुपन्क्षी विकास मन्त्रालय र प्रादेशिक भूमी व्यवस्था, कृषि तथा सहकारी मन्त्रालयविच समन्वय र सहकार्यको लागि संघीय कृषि तथा पशुपन्क्षी विकास मन्त्रीको अध्यक्षता एक संघ र प्रदेश कृषि विकास निर्देशन समितिको व्यवस्था हुनु पर्ने देखिन्छ ।

#### संघ र प्रदेश कृषि विकास निर्देशन समितिको गठन

- माननीय मन्त्री, संघीय कृषि तथा पशुपन्क्षी विकास मन्त्रालय - अध्यक्ष
- माननीय मन्त्री, प्रादेशिक भूमी व्यवस्था, कृषि तथा सहकारी मन्त्रालय (सातै प्रदेश) -सदस्य
- सचिव, संघीय कृषि तथा पशुपन्क्षी विकास मन्त्रालय -सदस्य सचिव

#### संघ र प्रदेश कृषि विकास निर्देशन समितिको कार्यविवरण

- राष्ट्रिय कृषि नीति, योजना, कार्यक्रम, मापदण्ड, कानून आदिको पहिचान तथा तर्जुमामा समान धारणा विकास एवं संघीय सरकारलाई पृष्ठपोषण,
- संघीय कृषि नीति, योजना, कार्यक्रम, मापदण्ड, कानून लगायत विषय कार्यान्वयनको नीतिगत, कानूनी, संस्थागत व्यवस्थाको पहिचान र कार्यान्वयनको व्यवस्था,
- संघीय कृषि नीति, कानून, मापदण्ड लगायतका विषयमा एकरूपता तथा सामान्जस्यता कायम गर्ने गराउने व्यवस्था,
- संघ र प्रदेशका कृषि विकासका निकायहरुविच अधिकार तथा कार्य क्षेत्र सम्बन्धि समस्या वा विवादको निरूपण गर्ने,
- कृषि विकासका लागि प्रदेशमा जाने संघीय स्रोत बाँडफाँड (सशर्त अनुदान, विशेष अनुदान र समपुरक अनुदान) को लागि संघीय मन्त्रालय मार्फत राष्ट्रिय प्राकृतिक स्रोत तथा वित्त आयोगमा सिफारिश गर्ने,
- संविधान तथा मौजुदा कानूनको अधिनमा रहि दुई तहविच सहकार्य तथा समन्वय सुदृढ गर्नको लागि गर्नु पर्ने आवश्यक अन्य कार्यहरु

संघ र प्रदेश कृषि विकास निर्देशन समितिको बैठक चौमासिक अवधिमा कम्तिमा एक पटक बस्ने र सो को व्यवस्थापन संघीय कृषि तथा पशुपन्क्षी विकास मन्त्रालयले गर्ने ।

#### 2. Federal and Provincial Agriculture Coordination Committee (संघ र प्रदेश कृषि विकास समन्वय समिति)

- संघ र प्रदेश कृषि विकास निर्देशन समितिलाई प्राविधिक रूपमा सघाउन संघीय कृषि तथा पशुपन्क्षी विकास मन्त्रालय र प्रादेशिक भूमी व्यवस्था, कृषि तथा सहकारी मन्त्रालयविच समन्वय र सहकार्यको लागि संघीय कृषि तथा पशुपन्क्षी विकास सचिवको अध्यक्षता संघ र प्रदेश कृषि विकास समन्वय समिति गठन गर्नु उपयुक्त हुने ।

#### संघ र प्रदेश कृषि विकास समन्वय समितिको गठन

- सचिव, संघीय कृषि तथा पशुपन्धी विकास मन्त्रालय - अध्यक्ष
- प्रदेश सचिव, प्रादेशिक भूमी व्यवस्था, कृषि तथा सहकारी मन्त्रालय (सातै प्रदेश) -सदस्य
- सह सचिव, संघीय कृषि तथा पशुपन्धी विकास मन्त्रालय -सदस्य सचिव

### संघ र प्रदेश कृषि विकास समन्वय समितिको कार्यविवरण

- संघ र प्रदेश कृषि विकास निर्देशन समितिको कार्य एवं निर्णय प्रकृत्यामा प्राविधिक पृष्ठपोषण तथा सहजीकरण गर्ने,
- निर्देशन समितिको निर्णय कार्यान्वयनको आवश्यक व्यवस्था गर्ने,
- प्रदेश मन्त्रालय र मातहतका निकायहरू र कार्यरत जनशक्तिको प्राविधिक र व्यवस्थापकिय क्षमता विकास सम्बन्धि कार्यक्रम पहिचान र कार्यान्वयनको व्यवस्था गर्ने,
- संघीय कृषि नीति तथा कार्यक्रम बारे जानकारी एवं कार्यान्वयनमा प्रदेशको सहयोग र भूमिका बारे छलफल तथा निर्णय गर्ने,
- समन्वय सम्बन्धमा देखा परेका समस्याहरू र समाधानका उपायहरू बारे छलफल तथा निर्णय गर्ने ।  
संघीय कृषि तथा पशुपन्धी मन्त्रालयले नियमित रूपमा त्रैमासिक रूपमा समन्वय समितिको बैठक बसाउने तथा सो को लागि आवश्यक लजिस्टिकको व्यवस्था गर्ने ।

### 3. Provincial and Local Level Coordination Committee (प्रदेश र स्थानीय तह कृषि विकास समन्वय समिति)

- कृषि विकास कार्यक्रम कार्यान्वयनको सन्दर्भमा प्रदेश र स्थानीय तह समन्वय कायम गराउन एक प्रदेश र स्थानीय तह कृषि विकास समन्वय समितिको गठन गर्नु आवश्यक देखिएको

### प्रदेश र स्थानीय तह कृषि विकास समन्वय समितिको गठन

- प्रदेश सचिव, प्रादेशिक भूमी व्यवस्था, कृषि तथा सहकारी मन्त्रालय -अध्यक्ष
- प्रदेश कृषि विकास निर्देशनालयका प्रमुख -सदस्य
- प्रदेश अन्तर्गतका सबै कृषि ज्ञान केन्द्रका प्रमुखहरू -सदस्य
- प्रदेश अन्तर्गतका गाँउपालिका/नगरपालिका कृषि विकास शाखा/कृषि सेवा केन्द्रका तर्फबाट प्रत्येक जिल्लाबाट जिल्ला समन्वय समितिको सिफारिशमा छनौट भएका एक जना कृषि विकास शाखा/कृषि सेवा केन्द्रका प्रमुख -सदस्य
- बरिष्ठ कृषि अधिकृत प्रादेशिक भूमी व्यवस्था, कृषि तथा सहकारी मन्त्रालय -सदस्य सचिव

### प्रदेश र स्थानीय तह कृषि विकास समन्वय समितिको कार्यविवरण

- स्थानीय तहमा कार्यरत जनशक्तिको प्राविधिक र व्यवस्थापकिय क्षमता विकास सम्बन्धि कार्यक्रम पहिचान र कार्यान्वयनको व्यवस्था गर्ने,
- प्रादेशिक कृषि नीति तथा कार्यक्रम बारे जानकारी एवं कार्यान्वयनमा स्थानीय तहको सहयोग र भूमिका बारे छलफल तथा निर्णय गर्ने,
- समन्वय सम्बन्धमा देखा परेका समस्या तथा मुद्दाहरुको पहिचान गरि समाधानका उपायहरु बारे छलफल तथा निर्णय गर्ने ।

प्रदेश र स्थानीय तह कृषि विकास समन्वय समितिको बैठकको आयोजना प्रादेशिक भूमी व्यवस्था, कृषि तथा सहकारी मन्त्रालयले गर्ने । यस्तो बैठक प्रत्येक चौमासिकमा कम्तिमा एक पटक बस्ने व्यवस्था गर्ने ।

## **Horizontal coordination mechanism**

### **Province to Province Coordination Committee**

- Exchanges (information, technology, experiences, learning etc.)
- Mutual Recognition Agreement
- Coherence in policy, regulation, standard etc.
- Cross-learning visit
- Joint project

### **Rural/Municipalities Coordination Committee**

- Exchanges (information, technology, experiences, learning etc.)
- Coherence in policy, regulation, standard etc.
- Cross-learning visit
- Joint project

## **2. Reorientation of extension services**

- Redefining extension service- defining service, standard for service and service provision, competencies required in extension professional
- Separate extension strategies, approach and methods for clientele group
- Focus on needs, capacity and problems of women farmers
- Revitalize the concept of Subject Matter Specialist (SMS) (may need change in civil service act, agri service regulation)
- From generalist to specialist (crop/subject specific extension can be thought of)
- Strengthen its understanding on matters with respect to technology, markets, prices, demand and policies
- Strengthening agri. labs putting it under specialist service
- Train and prepare critical mass of manpower to work in the various labs., also providing by various incentives including risk allowances
- Separate out extension service from subsidy administration and handouts distribution
- Ensure subsidy and free handouts to all eligible, simplify selection and awarding process and administer subsidy and handouts preferably from local level units
- Shifting of extension priority on the following:
- Climate change adaptation and mitigation measures sustainability and resource efficiency crop diversification also including neglected but nutritious crops
- nutrition-sensitive agriculture

- Running farmers field schools (FFS) homestead gardening
- development and scaling of integrated (yet profitable) farming model (suitable for small farmers)
- nature-positive farming such as ecological and organic farming

### **Major areas and priorities of contemporary extension services**

- Produce more from less (climate smart technologies)
- Agro-biodiversity conservation and natural resource management
- Agri. startups and agribusinesses
- Digitalization and data-driven agriculture
- Value addition and product development
- Welfare of marginal farmers, landless farmers, and agriculture and food workers
- Assist in establishing rural urban linkage
- Promoting Healthy food habit
- Risk and disaster and crop pest and disease epidemic management
- Extension service management in public health related pandemic

### **Some potential alternate/complementary arrangements for extension service delivery**

- “One Ward One Technician”
- Utilization of FG/Cooperatives
- Utilization of Local Resource Person
- Farmers council
- Community Agriculture Service Centre (CAESC)
- University extension in Land Grant model
- Privatizing extension of commercial crops and large scale farming can be thought of
- Formalizing/legalizing private sector extension

### **Conclusion and way forward**

- It is a positive development that most of the extension functions have been handed over to lower-level governments
- However, there is a danger that extension clients may be denied of needed extension supports and services owing to poor priority towards and the potential lack of capacity of these governments.
- Provisioning demand-driven and responsive extension and advisory services to the needy farmers and agribusinesses could be compromised if the capacity of local level government is not urgently enhanced.
- Increasing extension coverage is urgently needed...
  - AFU-land grant model, NGOs, private extension
- Extension has to be mindful of changing agrarian system and practices and develop institutional and staff capacity to address the changes accordingly
- Extension has to be inclusive to help the marginalized groups in improving their livelihood
- Reorient AKC as a specialized extension service unit and as a unit responsible for capacity building of local level extension units

## २.३. Linkage and Coordination between Agricultural Research Extension and Education in the Federal Context

**Dr. Ram Krishna Shrestha**  
**Chief, Centre for Crop Development and Agrobiodiversity Conservation**

### **Outline of the presentation**

- The context
- Conceptual framework
- Current state of extension service
- REE linkages and issues around
- Some suggested REE linkage mechanisms
- Beyond REE
- Way forward
- conclusion

### **Why are extension services often less effective in achieving desired outcomes?**

The effectiveness and performance of agriculture extension and advisory services is contingent on several factors (Peterson, W 1997, Anderson, J. R. G. Feder 2004).

- large scale and complexity of extension operations,
- the important influence of the broader policy environment,
- weak links between extension and knowledge generation institutions,
- difficulties tracing extension impact,
- problems of accountability,
- weak political commitment and support,
- extension agents also entrusted for other public duties beyond those related to knowledge transfer,
- severe difficulties of fiscal sustainability

### **Two types of REE linkage**

#### **A. Organizational (Swanson, B. 1997)/Structural (Bourgeois, R. 1990)**

- structural modification of the research and/or extension organization or other organizations that are involved in an agriculture technology system.
  - formal merger of research and extension at the broader system level,
  - the merger of specific units within research or extension, or the creation of new positions, units, or permanent committees.
- REE/Research and Extension function in the same organization

#### **B. Managerial (Swanson, B. 1997)/functional**

- Managerial/functional mechanism
- Separate REE institutions collaborate with each other in technology generation and transfer through various interface mechanisms and activities
- REE linkage in Nepal mainly come under managerial/functional mechanism

## **Two types of REE linkage**

### **Why does linkage fail?**

- Organizational, functional or communication gaps often lead to research results not reaching farmers or being irrelevant to their needs.
- These linkage problems among major stakeholders
  - are extremely complex in nature
  - involving technical, environmental, organizational and human factors.
- The reasons for poor linkages between research and extension have been categorized into political, technical and organization, resource, communication, motivational and incentive (Singh, G., Pathak, R., & Dixit, H. 2019)

## **Current state and issues of REE institutions and linkages**

### **REE institution- extension**

- has country-wide network yet inadequate institutional capacity (Babu & Sah, 2019).
- extension institutions are grossly less capable and poorly equipped to cater farmers' and entrepreneurs' need.
- Extension institutions- under three tiers of government. All the three governments involved in extension service provisioning
  - ✓ overlapping extension services offered,
  - ✓ Discrepancies in norms, standard and quality of service
- Frequent changes in organizational structure; restructuring often on *ad hoc* basis rather than on the basis of need
- Weak staff management, performance monitoring, and evaluations (Sah & Babu, 2019)
- Frequent transfer of extension managers

### **Poorly motivated staff**

- lack of transparency and equal treatment in job placement, transfer, promotion, poor working environment, poor execution of reward and punishment system, political pressure and poor logistic supports (Shrestha & Sanjel 2018).
- weak performance evaluation system within the entire extension system (Thapa, 2010)
- Subedi and McNamara (2012)- neither had the technical skills nor motivation to serve the farmers.
- Are poorly supervised and not adequately guided by extension professionals.
- unpredictable and poor career development path
- excessive influence of trade unions in job placement, transfer, promotion and other opportunities and benefits

### **Inadequate competency**

- competencies of majority of frontline extension workers are generally inadequate
- generalists; poorly equipped with technical knowledge and skills in agricultural production practices, and also weak in process skills, including social mobilization (Subedi and McNamara (2012)
- ADB (2014) knowledge, competencies, and work ethic demonstrated by Technical Education and Vocational Training (TEVT) graduates were much lower than expected.
- are poor in agribusiness skills (FAO, 2014).
- less competent in providing technical support and advisory service in generic areas such as identifying and controlling pests and diseases of crops, providing information on fertilizer doses and managing soil fertility (Dahal et al 2020)
- Many extension agents are not making good use of Information and Communication Technology (ICT) in extension and advisory services (Shrestha & Sanjel, 2018)

- Are often poor in soft skills such as communication and leadership skills
- Extension research – non existent

### **REE institutions-education**

- A number of universities, including AFU, Far-western, Purbanchal and TU offer higher degree in agriculture, more than 12 private and affiliated agricultural colleges and polytechnic institutes in Nepal are aiding for higher education in agriculture.
- Learning experiential exposure (LEE), animal health camp, plant clinic, IPM schools in farmer's field, establishment of Agriculture Science Center (ASC), seed processing plants for quality seeds provision to farmers are some **efforts made by AFU to link the research, extension and education with the community** (Jaishi, M. 2020)
- Establishment of Research Development Training and Extension Center (RD-TEC) in Lamjung campus as a research and extension wing of campus and Radio room in Paklihawa Campus as a broadcasting center by **IAAS are some activities to coordinate research, extension and development activities** done so far by agriculture education institutions of Nepal (Jaishi, M. 2020)
- University curriculum is rather weak and does not prepare students with the required skills and competencies for quality extension work; (Babu & Sah, 2020).
- Under Graduate (UG) curricula are not updated regularly; generally, the curricula cover more theoretical aspects with limited practical application and with less practical and hands on sessions. (Babu & Sah, 2020).
- Brain drains of agriculture graduates is a serious issue
- There has been influx of agricultural colleges in recent times.
- Focus of agricultural education has been more on numbers than on quality. Students not getting enough exposure to farming systems and farming businesses. Our education system is producing graduates having more theoretical knowledge rather than practical experiences.
- Likewise, quality issues of mid-level technicians increasing due to mushrooming of private agriculture college/school/training centers.
- NARC's capacity to carry out research has been constantly weakened over the years mainly due to understaffing and other management issues
- Performance of public extension delivery system has been negatively impacted also by relatively weak national research system and less effective national agriculture education system

## REE INSTITUTIONS IN NEPAL- SUMMARY

<p style="text-align: center;"><b>AGRICULTURAL RESEARCH</b></p>	<ul style="list-style-type: none"> <li>• Largely a public sector function in Nepal. <i>Weak NARS (GoN, 2016).</i></li> <li>• NARC- an autonomous organization</li> <li>• Heavily understaffed</li> <li>• Performance marred by external influence and internal mgt. issues</li> <li>• Increasingly under scrutiny for mediocre</li> </ul>
<p style="text-align: center;"><b>AGRICULTURAL EXTENSION</b></p>	<ul style="list-style-type: none"> <li>• Public sector as a main player</li> <li>• Nationwide presence yet inadequate institutional capacity (<i>Babu &amp; Sah, 2019</i>).</li> <li>• Poor coverage in terms of physical, subject matter &amp; clientele group</li> <li>• Blamed for being less efficient and less responsive to clients' need</li> <li>• More focused on subsidy and handouts</li> </ul>
<p style="text-align: center;"><b>AGRICULTURAL EDUCATION</b></p>	<ul style="list-style-type: none"> <li>• Being offered both from public and private sectors</li> <li>• focus of agricultural education has been more on numbers than on quality (<i>Pun, U. 2019</i>).</li> <li>• Less exposures of student to field experiences</li> </ul>

### Existing major agri. REE linkages

Almost all linkages are functional and managerial ones

Existing major agri. REE [linkages \(table include\)](#)

### Factors influencing and issues with R-E-E linkage and coordination

#### Issues with R-E-E linkage and coordination

- Extension service also suffers from weak linkages between the research and extension systems.
- No single window to govern and coordinate R-E-E functions. Separate chain of command for education, extension, and research, which seemed rather competing than complementing each other (Subedi & Sasidhar, 2020).
- Coordination among teaching, research, and outreach activities is lacking
- Coordination amongst universities and government agricultural institutions is unsatisfactorily weak
- Poor link between pre-service and in-service training
- ADS (GoN, 2016) asserted that R-E-E institutions were separated rather than integrated resulting in communication problems in technology development.
- The research and extension system is poorly linked with the agricultural university system (GoN, 2016).

#### Issues with REE linkage- Internal factors

**REE institutions belonging to different parental organizations follow their own organizational mandate** and which often does not clearly spell out linkage function; they have different capacity, organizational norms and culture

- In some cases there is **ambiguity about the roles** of different REE institutions



- Many a times, **leadership of REE institutions and interpersonal relationship** between and among the heads of REE institutions directly impacts the linkage and collaboration
- Poor state of good governance across the REE institutions and general lack of a system of accountability and transparency has also affected the REE linkage

#### **Issues with REE linkage- Enabling environment**

- Strengthening agriculture research and development in general improving R-E-E functions and agriculture extension in particular has not received due policy and funding priority from the government (Babu & Sah, 2019).
- Investment in the sector is inadequate and has been declining (GoN, 2016). Investment in extension- less than 1% of the national budget per ha budget investment: 1:304 (2017/18)
- Civil service act related- right person at right place, specialist post (e.g. trainer), transfer management etc.
- General lack of policy consistency as new policies are brought in without sufficiently evaluating existing policies against their envisaged purposes. There is a rare practice of policy monitoring and evaluation.

#### **Strengthening REE functions and linkages**

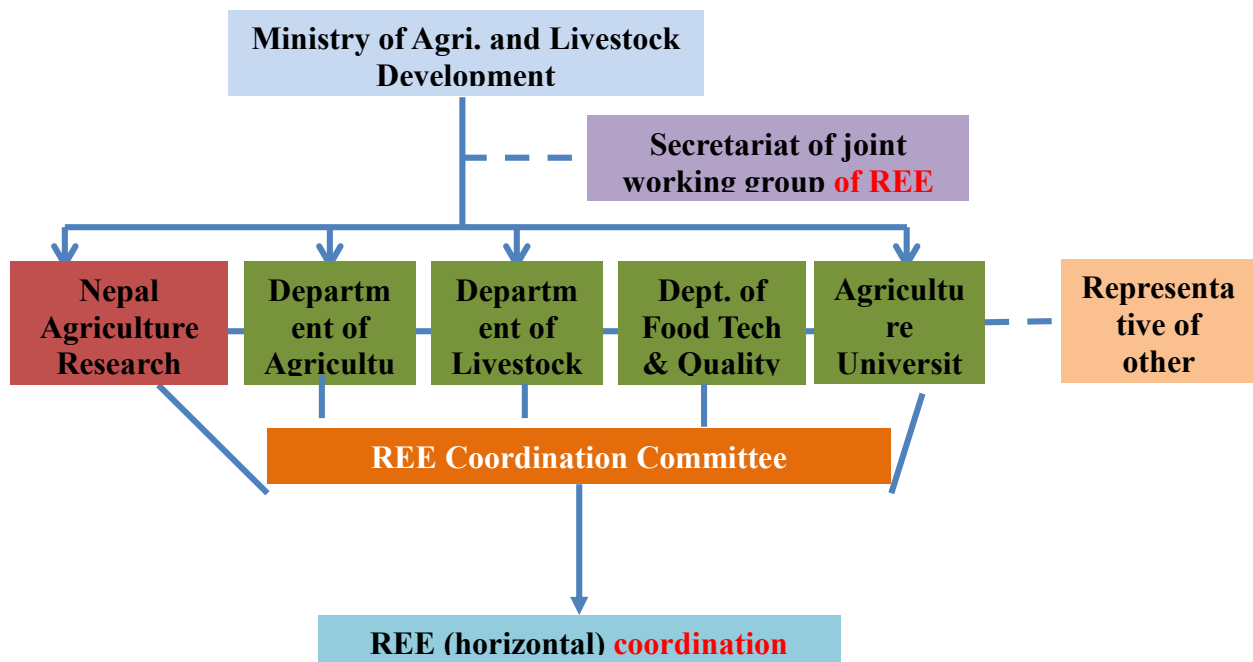
##### **Improving agriculture education/teaching**

- Land Grant University Model for need based technology generation and dissemination can be thought of (Madan & Maredia, 2021).
- Expanding branches of AFU and TU/IAAS in collaboration with local community in different parts of the country to foster better agriculture research, teaching and extension (Nepali P. B., 2018)
- Bringing AFU under MoALD can be thought of and discussed
- Agricultural colleges and universities maintain close working relationships with farmers, agribusiness operators, and field extension professionals through extension or outreach faculty members in order to offer hands-on training to Under Graduate students (Subedi and Sasidhar, 2020)

##### **Improving agriculture research**

- Necessary amendment in the NARC Act, 2048 in order for overhauling national research system
- Reorganization and restructuring of NARC is urgently needed • Fulfilling the vacant scientist and technician positions ASAP
- Provide social recognition and perks and benefits for scientist to stop brain drain
- There is a need of agricultural research division at MoALD

## Suggested agri. research, extension and education linkage mechanism



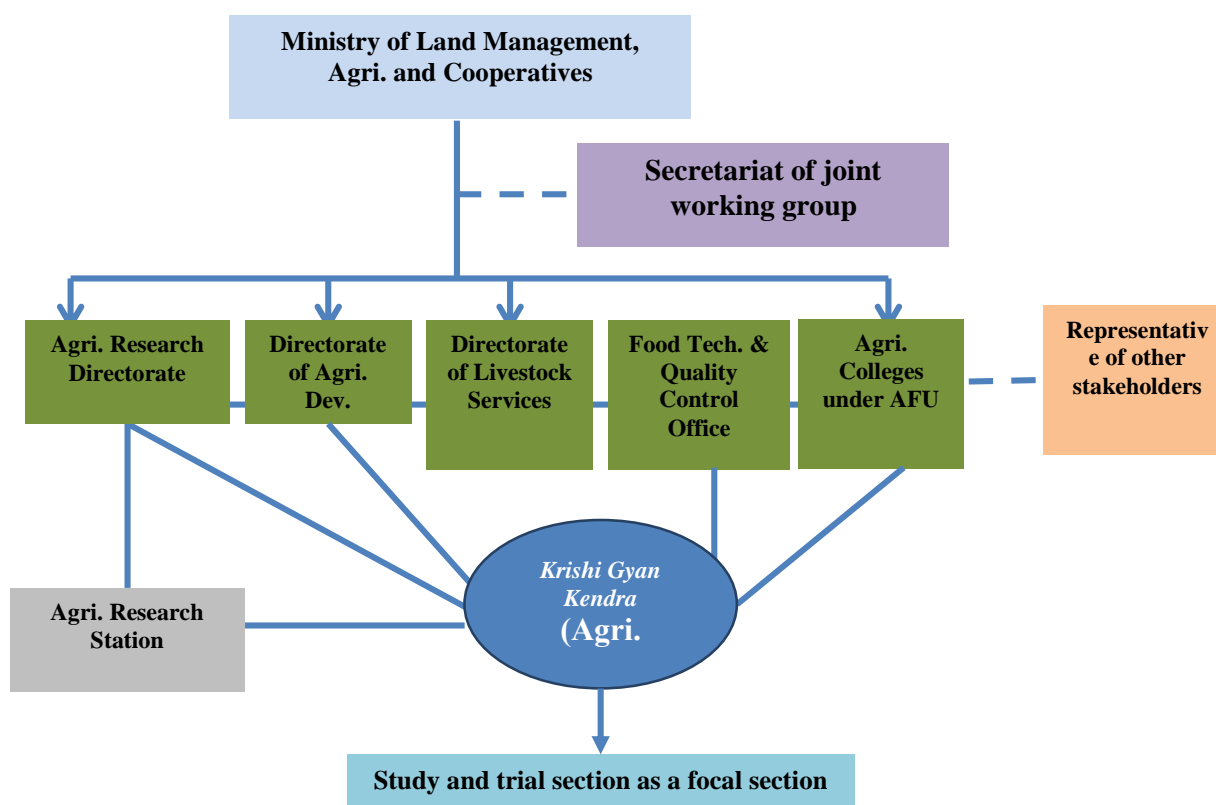
## REE (horizontal) coordination section/desk

Suggested R-E-E linkage mechanism and mandate

### At federal level

- R-E-E interface working group secretariat to be led by the Secretary of MoALD
- Mandate
  - ✓ REE policy
  - ✓ coordination and direction
  - ✓ Funding provision for REE interface programs/projects/activities
- REE coordination committee of the head of R-E-E institutions
  - ✓ Bi-monthly meeting
  - ✓ joint planning
  - ✓ operationalize REE interface activities
  - ✓ Monitoring and evaluation
- a separate section/desk in each of R-E-E institution responsible for fostering horizontal coordination among them

## Suggested agri research, extension and education linkage mechanism at province level



### R-E-E linkage mechanism at Province level and mandate

- REE interface working group secretariat to be led by the Secretary of provincial MoLMAC
- Provincial REE funding
- joint planning
- bi-monthly meeting between R-E-E institutions
- Possible decision areas
  - ✓ exchange programs
  - ✓ resource sharing
  - ✓ internship program

### R-E-E linkage modality at *Krishi Gyan Kendra* level

- outreach research site of Provincial Agri. Research Directorate/ARS
- technology validation trials
- joint planning and implementation of other trial and demonstration
- periodic training to local level extension staffs on promising technologies and research outcomes
- Scientist-technicians regular interaction
- Joint identification of researchable problem
- Joint mobile training and interaction with farmers in production pockets
- utilizing the scientists and faculties for periodic training of frontline extension workers on promising technologies and research outcomes.
- Joint field visit and monitoring
- internship program

## R-E-E linkage mechanism at local level

Some of the potential interface activities at local levels include

- minikit demonstration
- internship program
- regular joint field visit and interaction with farmers by REE institutions
- periodic training to local level extension staffs on promising technologies and research results
- As a site for FAT

## Reorientation of extension services

Beyond Agri. REE linkage....

## Evolution in agri. knowledge management



**1960 - 1990**

- Focus on the generation of knowledge
- Research dominated system

**1990 - 2000**

- Focus on the generation and diffusion of knowledge
- Agriculture research, education and extension as components of knowledge triangle

**2000**

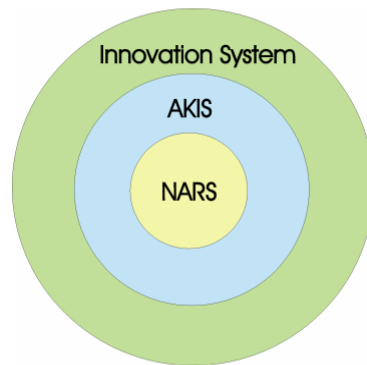
- Focus on the generation, diffusion, and application of knowledge
- Innovation rather than research as organizing principle for technology generation and dissemination

Innovation system: adapted from: Roseboom, J. (2004)

## Innovation- as a system

- comprises a far broader set of actors than the traditional agricultural research, extension, and education agencies.
- Innovation takes place throughout the whole economy, and not all innovations have their origin in formal science and technology nor are they all exclusively technical.

- It places more emphasis on the role of farmers, input suppliers, transporters, processors and markets in the innovation process.



Innovation system: adapted from: Roseboom, J. (2004)

### **CONCLUSION AND WAY FORWARD**

- Public extension faces a number of challenges keeping it from expected performance and delivery
- Revitalization of extension system is **MUST** in order to help transform the agriculture sector and the economy as a whole.
- Strengthening REE linkage is one of the urgent tasks to that end
- A strong mechanism of collecting farmers' and entrepreneurs' problems to be researched in the involvement of farmers' association/commodity association, local govt., scientist and extension agents
- A separate policy framework is highly desirable

२.४.बागमती प्रदेशमा खाद्य सुरक्षा प्रबर्धनका लागि बिकसित नविनतम कृषि प्रविधिहरु, बिकसित प्रविधिहरुको सदुपयोगका लागी कृषी शिक्षा र कृषी प्रसारका निकायहरु संग सहकार्यका क्षेत्रहरु तथा सो सम्बन्धमा कृषी अनुसन्धान क्षेत्रको आगामी कार्यदिशा"

*Chitra Bahadur Kunwar, Senior Scientist  
Coordinator, National Maize Research Program, Rampur Chitwan*

(क) नविनतम कृषि प्रविधिहरु:

१) खुला सेचित तथा वर्णशंकर मकैको जातहरु: रामपुर हाईब्रिड - १०, १२, १४, १६



रामपुर हाईब्रिड — १०



रामपुर हाईब्रिड — १२



रामपुर हाईब्रिड — १६



रामपुर हाईब्रिड - १४

२) मकैको रोग व्यवस्थापन सम्बन्धि प्रविधिहरु

- मकैको रासायनिक तथा जैविक तरिकाबाट बीउ उपचार
- डाठ कुहिने रोगको जैविक तथा रासायनिक विधिबाट व्यवस्थापन



३) मकैमा मलखाद व्यवस्थापन सम्बन्धि प्रविधिहरु:

- खुला सेचित मकैका लागि मलखादको शिफारिस दर:  
२०:६०:४० नाइट्रोजन, फस्फोरस र पोटास कि.ग्रा. प्रति हेक्टर + १० टन प्रति हेक्टर प्राङ्गारिक मलको प्रयोग गर्ने (Twelve different levels of NPK fertilizers were used.)
- वर्णशंकर मकैको लागि मलखादको शिफारिस दर:  
१८०:६०:६० नाइट्रोजन, फस्फोरस र पोटास कि.ग्रा. प्रति हेक्टर+ १५ टन प्रति हेक्टर प्राङ्गारिक मलको प्रयोग गर्ने
  - ✓ पोटास मललाई नाइट्रोजन जस्तै पहिलो पटक घुंडा/घुंडा अवस्थामा ५०% र दोश्रो पटक धान चमरा निस्कनु अगाडी ५०% प्रयोग गर्दा प्रभावकारिता बढी हुने
  - ✓ एकीकृत खाद्य तत्व व्यवस्थापन प्रणाली अन्तर्गत रासायनिक मलको शिफारिस मात्राको ५०% रासायनिक श्रोत र ५०% प्राङ्गारिक श्रोत (गोबर मल/कम्पोस्ट मल/ भर्मीकम्पोस्ट/ हरियो मल/ जीवाणु मल/ कुखुराको मल) बाट उपलब्ध हुने गरी प्रयोग गर्ने

#### ४) मकैको किरा व्यवस्थापन सम्बन्धि प्रविधिहरु

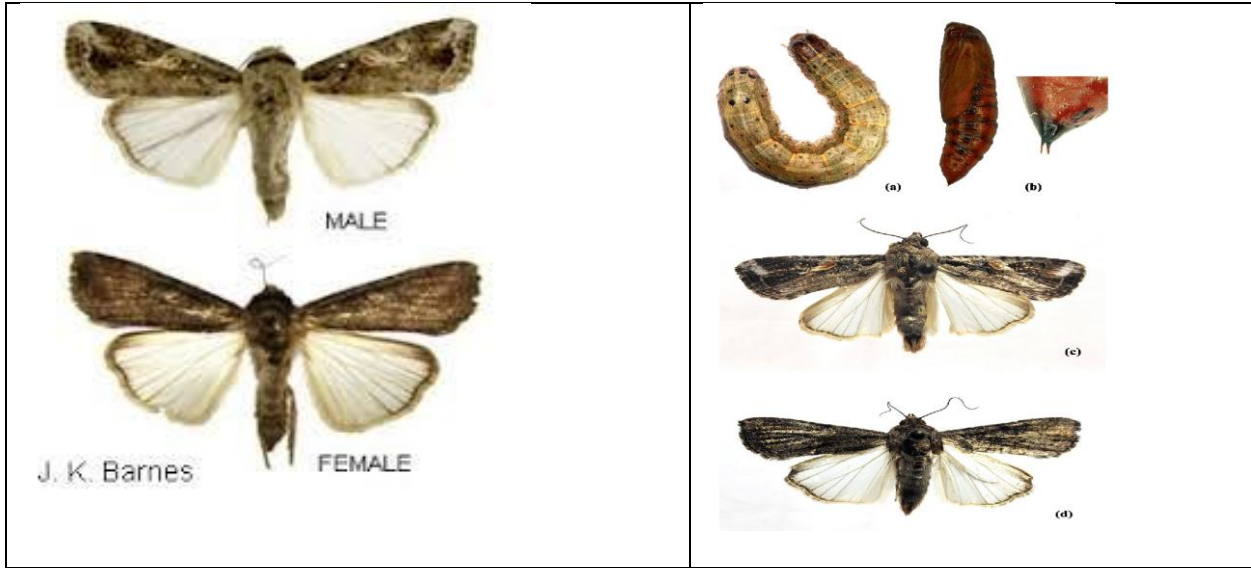
##### अमेरिकन तथा रैथाने फौजी किरा

- मकैको धर्के गवारोको रासायनिक व्यवस्थापन : Spinosad 0.3 ml/L पानीमा मिसाई मकैको ८-१२ पाते अवस्थामा र त्यसको १०/१० दिनको अन्तरमा २ पटक छरी व्यवस्थापन गर्ने
- मकैको धर्के गवारोको क्षति कम गर्न रामपुर कम्पोजीट, रामपुर हाइब्रिड-१० र रामपुर हाइब्रिड-१२ जात प्रयोग गर्ने
- मकैको लाही: Flonicamide 0.5 ग्राम/लिटर पानीमा मिसाई १२-१६ पाते वा धान चमरा आउने अवस्थामा १० दिनको फरकमा दुइ पटक छर्ने
- अमेरिकन फौजी किरा व्यवस्थापनको लागि imidoclorapit ४८% FS ले ४ mL प्रति के जी बिउलाई उपचार गर्ने
- फौजी किराले मकैको पातमा पारेको फुलको थुप्रो टिपी नस्ट गर्ने



- अमेरिकन फौजी किरा व्यवस्थापनको लागि बत्तिको पासो, FAW lure प्रयोग गर्ने
- पासो बालीको रूपमा नेपियर र डेस्मोडियमको प्रयोग गर्ने

- अमेरिकन फौजी किरा व्यवस्थापनको लागि spinosad, spintioram, chlorantrionpreole(०.३ mL/L) र निमको तेल (५ mL/L) प्रयोग गर्ने



#### ५) मकैको बाली व्यवस्थापन सम्बन्धि प्रविधिहरु:

- उन्नत जातको मकैको लागि ७५ x २५, हाईब्रिडको ६० x २५, इन्ब्रिड लाईनको बिउ उत्पादनको लागि ५० x २० को दुरीमा लगाउने
- हिउदे मकैको झारपात व्यवस्थापनको लागि कालो प्लास्टिकको छापो प्रभावकारी हुने
- मकैको बिउमा ४ ग्राम जिङ्क (१९ ग्राम जिङ्क सल्फेट) प्रयोग गर्दा १०% उत्पादन बढ्ने

#### (ख) नविनतम कृषि प्रविधिहरु सदुपयोगको कृषि शिक्षामा हुन सक्ने सहकार्यका क्षेत्रहरु:

- विश्वविद्यालय र अनुसन्धान परिषदबिच क्षमता अभिवृद्धि कार्यक्रममा सहकार्य गर्ने
- कृषि अनुसन्धान परिषद अन्तर्गतका अनुसन्धानका विभिन्न निकायहरु सोध कार्यमा सल्लाहकार समितिमा रही अनुसन्धान क्रियाकलापमा सहभागी गराउने र अनुगमन गर्ने
- विश्वविद्यालयको कोर्स परिमार्जन गर्दा नार्कका प्रविधि समावेश गर्ने
- इन्टरनका विद्यार्थीलाई तालिम तथा प्रशिक्षण गर्ने

#### (ग) नविनतम कृषि प्रविधिहरुको कृषि प्रसारका निकायहरूसंग हुन सक्ने सहकार्यका क्षेत्रहरु:

- कृषकको भौगोलिक क्षेत्र अनुसारको समस्याहरुको पहिचान
- किसानकै खेत बारीमा समाधान गर्न सकिने समस्याहरुको अनुगमन, निरीक्षण र निराकरण सिबिर संचालन
- नार्कले विकसित गरेको प्रविधिहरु प्रसार गर्ने र श्रोत बिउको लागि सहकार्य गर्ने
- अनुसन्धान र कृषकको बीचमा समन्व गर्ने र कृषि प्रसारले आयोजना गर्ने प्राविधिक/अधिकृत तालिममा श्रोत व्यक्तिको रूपमा सहकार्य गर्ने
- किसान कल सेन्टर, टि भी, रेडियो मार्फत विकसित प्रविधिहरु प्रसारमा सहकार्य गर्ने



- कृषि प्रसारबाट छनौटमा परि आएका अगुवा कृषकलाई बिकसित प्रविधि बारे जानकारी गराउने
- कृषि प्रसारमा विभिन्न बालीका नेपाली जातहरूलाई विशेष प्राथमिकतामा राखेर कार्यक्रम गर्ने

### **Major Issues of Agriculture Sector**

- Low productivity and lower competitiveness
- Land fragmentation (About 52 % of the farm households have less than 0.5 ha of land)
- Subsistence agriculture with poor market access
- Low resilient capacity of smallholder farmers
- Rapid urbanization and use of fertile land on housing and residential purposes
- Poor attraction of youth in agriculture
- Shortage of labor force - around 2% of total populations (about 520,000 youths)
- migrated to work abroad each year

### **Challenges and Gaps**

- Develop the key institutions and instruments for policy implementation
- Increase factor productivity
- Expand the commercialization of agriculture based on high-value crops
- Improve the enabling environment for private sector development
- Strengthen the partnership approach
- Improve cross-sectoral interaction

### **How can we increase our maize productivity?**

1. Crop management practices
2. Replacement of seeds
3. Growing hybrid maize varieties
4. Others (Chemical fertilizers, irrigation, farm machinery and implements)

### **Challenges**

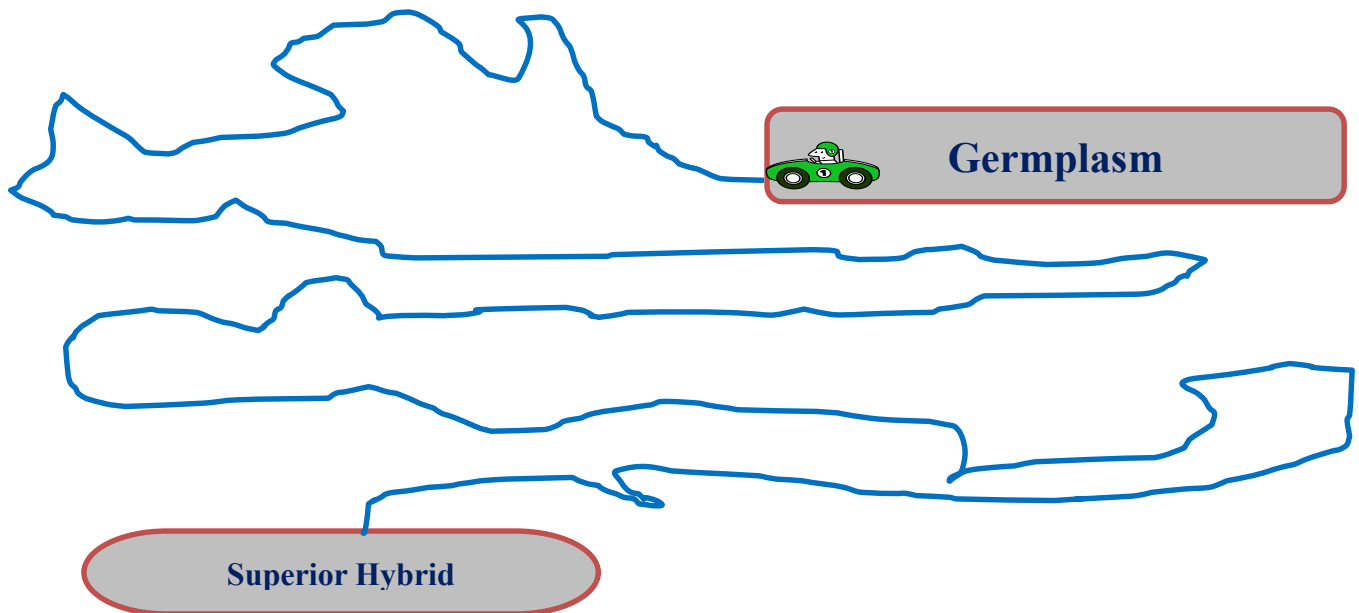
- Low productivity of major cereal crops
- Low seed replacement rate
- Malnutrition
- Input cost increasing
- Limited supply of quality seeds, fertilizers and other inputs
- High demand of seeds, grains and feeds
- Subsistence and traditional farming in hill
- Improved technologies not reached to the majority of resource poor farmers
- Market and marketing network for seeds and other inputs not well established

### **Opportunities**

- High demand of improved maize seeds, grains and feeds
- Marketing of CBSP produced seeds
- Research opportunities for development of drought/heat tolerant varieties
- Effective delivery service for up-scaling of developed technologies in partnership with different stake holders
- Diverse climate and production environments

- Diverse cropping patterns
- Food habit of mid hill people
- Wide range of cultivation
- Diversity of uses

### A route of Breeders: From Germplasm to Hybrid



More than hybrids...

**Productivity Increase = 1/3 Germplasm + 1/3 Agronomy + 1/3 Policy**

**(H. Braun, CIMMYT Wheat Program Director)**

### ३.कार्यपत्र माथि समिक्षा/टिप्पणी हरु

मिति २०७९,२६/०८/ गते आयोजित कृषि शिक्षाप्रसार तथा अनुसंधानबीच समन्वयात्मक , गोष्ठीमा प्रस्तुत भएका तपसिल अनुसारका कार्यपत्रहरु माथि समिक्षाटिप्पणीकर्ताहरुले गर्नु भएका /

1 समिक्षाहरु बुँदागत रुपमा टिपोट गरिएको छ/टिप्पणी

क्र . सं	बिषय	प्रस्तुतिकर्ता	टिप्पणीकर्ता	समिक्षा टिप्पणीहरु /
१	नविनतम कृषि प्रविधिहरुको प्रयोग मार्फत खाद्य सुरक्षा प्रवर्धनका लागि कृषि शिक्षा क्षेत्रको भूमिका, कृषि अनुसन्धान र कृषि प्रसारसँग सहकार्यका क्षेत्रहरु तथा सो सम्बन्धमा कृषि शिक्षा क्षेत्रको आगामी कार्यदिशा	प्रा .डा . अर्जुन कुमार श्रेष्ठ निर्देशक), अनुसन्धान तथा प्रसार निर्देशनालय, कृषि तथा वन विज्ञान विश्वविधालय(	<ul style="list-style-type: none"> <li>• भरत प्रसाद बिडारी निमित्त) प्रमुख , कृषि विकास (निर्देशनालय</li> <li>• शरण कुमार पाण्डे ,सचिव) कृषि तथा पशुपन्छी विकास (मन्त्रालय</li> </ul>	<ul style="list-style-type: none"> <li>• नेपालमा अझै १३जनसंख्या % ,सन्तुलित आहारबाट बन्चित रहेको</li> <li>• कृषि तथा वन विज्ञान विश्वविद्यालय स्थापना गर्नुको औचित्य र यस विश्वविद्यालयले सिक्षणप्रसार र , अनुसन्धानको क्षेत्रमा खेलेको ,भूमिकाको बारेमा जिकिर</li> <li>• अध्ययन संस्थान र अन्य सरोकारवालाहरुको उद्देश्य एउटै रहेकाले कृषि क्षेत्रको विकास र किसानको सम्बृद्धिका लागि सबै जना मिलेर अघि बढ्न पर्ने जोड,</li> <li>• हालको अवस्थामा देशभरी नै कृषि सिक्षाम जोड दिदै अनावश्यक रुपमा सिक्षण संस्था खुलिरहेकाले यो रोकन जरुरि र हाल भएका सिक्षण संस्थाको स्तारोनात्ति गरेमा मात्र पनि पर्याप्त हुने जिकिर,</li> <li>• वर्तमान अवस्थामा विश्वविद्यालयहरुले Job Creator नभई Job Seeker जनशक्ति उत्पादन गरिरहेको र सिक्षाको गुणस्तरतामा ध्यान दिन आवश्यक रहेको,</li> </ul>
२ .	बागमती प्रदेशमा खाध्य सुरक्षा प्रवर्धनका लागि बिकसित नविनतम कृषि प्रविधिहरु, बिकसित प्रविधिहरुको सदुपयोगका लागि कृषि शिक्षा र कृषि	डाचित्र . कुँवर .ब बरिष्ठ ) ,वैज्ञानिक नेपाल कृषि	<ul style="list-style-type: none"> <li>• अरुण खनाल वागवानी ) विकास (अधिकृत</li> </ul>	<ul style="list-style-type: none"> <li>• मकै वाली विकास केन्द्र रामपुरले विकास गरेका नयाँ जातरोग किरा , नियन्त्रण सम्बन्धि प्रयासहरु र अन्य ,अनुसन्धानको बारेमा जानकारी</li> <li>• प्रसारको कमिले गर्दा स्वदेशी जातहरुले स्थान नपाएकोमा गुनासो र</li> </ul>

	<p>प्रसारका निकायहरु संग सहकार्यका क्षेत्रहरु तथा सो सम्बन्धमा कृषी अनुसन्धान क्षेत्रको आगामी कार्यदिशा</p>	<p>अनुसन्धान (परिषद</p>	<ul style="list-style-type: none"> <li>• रामहरी तिमल्सिना कृषि अर्थ ) कृषि ,विज्ञ विकास निर्देशनालय (</li> </ul>	<p>कृषि प्रसारका निकायहरुले महत्वपूर्ण भूमिका निर्वाह गर्न आवश्यक रहेको,</p> <ul style="list-style-type: none"> <li>• कृषि क्षेत्रसँग सम्बन्धित समस्या , चुनौती र उत्पादन वृद्धिका लागि ,चालिनु पर्ने कदमका बारेमा प्रकाश</li> <li>• बिउ उत्पादन र बजारीकरणसँग सम्बन्धित समस्याहरु निर्मुलिकरण गर्न सबै निकाय मिलेर अगाडी बढ्नपर्ने अपील,</li> <li>• स्वदेशमै उत्पादित नयाँ मकैका जातहरुको प्रचार प्रसार गर्न Hybrid आवश्यक रहेकाले सरोकारवालाहरुको भूमिकामा प्रकाश पार्न आवश्यक</li> </ul>
<p>३ .</p>	<p>संघीय संरचनामा तिन तहका सरकारहरुका बीच समन्वय तथा सहकार्यमुलक कृषि प्रसार रणनीति</p>	<p>डा . रामकृष्ण -सह) श्रेष्ठ ,सचिव वाली विकास तथाजैविक विविधता केन्द्र (</p>	<ul style="list-style-type: none"> <li>• झलकनाथ कंडेल )योजना महाशाखा प्रमुख, कृषि तथा पशुपन्छी विकास मन्त्रालय(</li> <li>• रामहरी तिमल्सिना कृषि अर्थ ) कृषि ,विज्ञ विकास निर्देशनालय (</li> </ul>	<ul style="list-style-type: none"> <li>• हाम्रो देशमा कृषिको मुख्य समस्या भनेको नै तराईमा रहेका खेति योग्य जमिनको खण्डिकरण र स्वदेशी बस्तुहरुको उत्पादन लागत वृद्धि भई आयातित बस्तुहरुसँग प्रतिस्पर्धा गर्न नसक्नु हो ,</li> <li>• कृषि क्षेत्र विकासका लागि स्थानीय तहका प्राविधिकहरुको प्रमुख भूमिका रहने हुनाले ती प्राविधिकहरुको क्षेमता अवीवृद्धि गर्न निकै आवश्यक ,</li> <li>• सम्पूर्ण कार्यालयहरुले बनाई TOR ,लागु गर्नुपर्ने विषयमा ध्यानाकर्षण</li> <li>• कृषि ज्ञान केन्द्रहरुले कृषि अनुसन्धान परिषदको वाह्य अनुसन्धान स्थालसँग समन्वय गरि किसानहरुलाई प्रयोगात्मक तालिम दिन पर्ने विषयमा जोड ,</li> <li>• स्थानीयप्रादेशिक र संघीय , सरकारका प्राविधिक कर्मचारीहरु विच कार्यगत एकताको लागि वृहत छलफलको आवश्यकता</li> <li>• कृषि उत्पादनमा पर्याप्त अनुगमन आवश्यक रहेकाले तीन तह कै</li> </ul>

				सरकारको भूमिकामा प्रकाश पार्न सके अझै राम्रो हुने ,
४ .	संघीय संरचनामा कृषि शिक्षाप्रसार र कृषि , अनुसन्धानबीच समन्वयको खाका	डा . रामकृष्ण -सह) श्रेष्ठ ,सचिव वाली विकास तथा जैविक विविधता ( केन्द्र	<ul style="list-style-type: none"> <li>• भरत प्रसाद विडारी निमित्त) प्रमुख , कृषि विकास (निर्देशनालय</li> <li>• सन्दिप तिमल्सिना वागवानी ) विकास ,अधिकृत कृषि विकास निर्देशनालय(</li> </ul>	<ul style="list-style-type: none"> <li>• नेपालमा कृषि प्रसारको भूमिका सोचे अनुरूप हुन नसक्नुका कारणहरूमा चर्चा ,</li> <li>• कृषिशिक्षा र अनुसन्धानको हालको , संरचनागत अवस्था र बेथितीहरूको ,बारेमा ज्ञान</li> <li>• कृषि शिक्षा र अनुसन्धानको संरचनागत सुदृढिकरणका लागि चालिनु पर्ने कदमका विषयमा छलफल,</li> <li>• कृषि शिक्षा ,प्रसार र कृषि अनुसन्धानबीच समन्वयको खाका प्रस्तुती र विभिन्न सरोकारवालाहरूको भूमिकामा टिप्पणी,</li> <li>• विश्वविद्यालयले पनि अरु संस्था जस्तै Vertical र Horizontal Linkage मा प्रयास अघि बढाउन आवश्यक</li> </ul>

#### ४.सारांश

गोष्ठीमा कृषि प्रसार, अनुसन्धान र शिक्षा क्षेत्रले हाल गरिरहेको गतिविधिहरूको सम्बन्धमा सम्बद्ध सबै पक्षहरू बिच अनुभव आदानप्रदान भयो । कृषि शिक्षा, अनुसन्धान र प्रसारको समन्वय तथा सहकार्यबाट मात्र कृषि क्षेत्रको विकास प्रभावकारी हुन्छ भन्ने विश्वव्यापी सिद्धान्तलाई सबै क्षेत्रले आत्मसाथ गरेको देखियो । तर सहकार्य र समन्वयको प्रभावकारी नीतिगत तथा कार्यमूलक व्यवस्था हुन सकेको देखिदैन । सबै क्षेत्रबाट समन्वयको विविध क्रियाकलापहरू भईरहे पनि ठोस उपलब्धि हासिल गर्ने सवालमा न्युन नै रहेको देखिन्छ ।

कृषि अनुसन्धान क्षेत्रले किसानको अपेक्षा अनुसारको प्रविधि विकास गर्न सकेको देखिदैन । विकास भईरहेका प्रविधिहरूको प्रसार समेत न्युन देखिन्छ । अनुसन्धान क्षेत्रमा जनशक्ति तथा बजेटको अप्रयासाता, संगठनिक अस्तव्यस्तता लगायतका समस्याहरूलाई तत्काल समाधान नगरी अनुसन्धान क्षेत्रको सुधार नहुने भएको हुँदा सम्बद्ध सबै पक्षहरूले यस विषयलाई सम्बोधन गर्ने प्रभावकारी कदम चाल्नु पर्ने देखिन्छ । त्यसै गरि कृषि शिक्षा क्षेत्रले देशको आवश्यकता अनुसारको जनशक्ति उत्पादन गर्ने भन्दा पनि बिकसित देशको लागि जनशक्ति उत्पादन गर्ने काम गरिरहेको देखिन्छ । हालैका वर्षहरूमा कृषि बिज्ञान अध्यापन गराउने संस्थाहरू र उच्च शिक्षा हाँसिल गर्ने जनशक्ति बढिरहेको देखिन्छ । यो कृषि विकासको लागि सकारात्मक कुरा हो । तर त्यस्ता शिक्षित जनशक्तिहरूलाई

स्वदेशमा बस्ने वातावरण बनाउन सकियो भने मात्र कृषि विकासमा ठोस योगदान पुग्दछ । तर हालको अवस्था हेर्दा त्यस्ता शिक्षित जनशक्तिहरू पलायन हुने क्रम बढिरहेको छ । सबै सम्बद्ध पक्षहरूले यस विषयमा गम्भीर भएर सोच्नु पर्ने आवश्यकता देखिन्छ । कृषि शिक्षा क्षेत्रले देशको आवश्यकता बमोजिमको जनशक्ति उत्पादन गर्ने तथा जनशक्तिहरूलाई उधमशिलाता प्रवर्धन गर्न सक्ने गरि क्षमता विकास गर्नु जरुरि देखिन्छ । त्यसै गरि कृषि क्षेत्रलाई नीतिगत रूपमा सधै अग्रणी प्राथमिकतामा राखिने गरिए पनि कृषि प्रसार क्षेत्रले करिब २०% किसानहरूलाई मात्र सेवा पुर्याउन सकेको देखिन्छ । प्रदान गरिएको सेवाको गुणस्तर र पद्धतिमा समेत प्रश्नहरू उठिरहेको अवस्था छ । यस विषयलाई सम्बोधन गर्न कृषि प्रसार कार्यकर्ताहरूको क्षमता विकास, प्रसारको पद्धतिमा सुधार, आवश्यक जनशक्ति तथा कार्यालयहरूको व्यवस्था गर्नु पर्ने जरुरि देखिन्छ ।

तसर्थ कृषि विकासको खम्बाको रूपमा रहेको शिक्षा, प्रसार र अनुसन्धान तिनै क्षेत्रभित्र रहेका आन्तरिक सुध्रिडीकरण तथा समन्वयको ठोस कार्ययोजना बनाई संस्थागत गर्नुपर्ने देखिएको हुँदा सम्बद्ध सबै पक्षहरूले आ-आफ्नो क्षेत्रबाट सक्दो प्रयासहरू गर्नु पर्ने देखिन्छ ।

## ५. अनुसूचीहरू

### कार्यतालिका:

#### कृषि शिक्षा, प्रसार तथा अनुसन्धानबीच समन्वयात्मक गोष्ठी

मिति: २०७९।०८।२६ गते

समय: बिहान ७:३०-३:०० बजेसम्म

स्थान: होटेल पल्पसा, हेटौँडा

आयोजक: कृषि विकास निर्देशनालय, हेटौँडा ।

समय	कार्यक्रम	जिम्मेवार पदाधिकारी
७:३०-८:३०	ब्रेकफास्ट	
८:३०-९:००	सहभागीको नाम दर्ता	
९:००-९:३०	उद्घाटन सत्र	
	सभाध्यक्ष	श्री भरत प्रसाद बिडारी, निमित्त प्रमुख, कृषि विकास निर्देशनालय
	प्रमुख अतिथि	मा. मन्जु वसुंधरा हुमागाई, कृषि तथा पशुपन्छी विकास मन्त्रालय
	बिशिष्ट अतिथि	मा. राज्यमन्त्री, इन्द्रमर्या गुरुङ, कृषि तथा पशुपन्छी विकास मन्त्रालय
	विशेष अतिथि	डा. शरण कुमार पाण्डे, सचिव, कृषि तथा पशुपन्छी विकास मन्त्रालय
	अतिथि	डा. विष्णु भण्डारी, कार्यकारी निर्देशक, नेपाल कृषि अनुसन्धान परिषद्, काठमाण्डौ
	अतिथि	डा. रेवती रमण पौडेल, महानिदेशक, कृषि विभाग, हरिहरभवन, ललितपुर ।
	अतिथि	डा. प्रकाश कुमार सज्जेल, सह सचिव, कृषि तथा पशुपन्छी विकास मन्त्रालय, काठमाण्डौ ।
		प्रा.डा. भार्गव खिताल, डिन, त्रि.वि., कृ.त.प.वि.अ.सं, काठमाण्डौ
	अतिथि	श्री होमराज विष्ट, निमित्त प्रमुख, कृषि व्यवसाय प्रवर्धन सहयोग तथा तालिम केन्द्र, चितवन, योजना महाशाखा प्रमुख, मन्त्रालय
		अन्य सहभागीहरू
	राष्ट्रिय गान	
	कार्यक्रमको औचित्यतामाथि प्रकाश पार्ने स्वागत मन्तव्य	श्री पवन सिंह भण्डारी, वरिष्ठ कृषि प्रसार अधिकृत, कृषि विकास निर्देशनालय
	कार्यक्रम उद्घाटन	प्रमुख अतिथिबाट
	<b>कार्यपत्र प्रस्तुतिकरण</b>	
९:३०-९:४५	नविनतम कृषि प्रविधिहरूको प्रयोग मार्फत खाद्य सुरक्षा प्रवर्धनका लागि कृषि शिक्षा क्षेत्रको भूमिका कृषि अनुसन्धान र कृषि प्रसारसंग सहकार्यका क्षेत्रहरू तथा सो सम्बन्धमा कृषि शिक्षा क्षेत्रको आगामी कार्यदिशा	प्रा.डा. अर्जुन कु.थेष्ट, कृषि तथा वन विज्ञान विश्वविद्यालय
९:४५-१०:००	बागमती प्रदेशको खाद्य सुरक्षा प्रवर्धनका लागि विकसित नविनतम कृषि प्रविधिहरू, विकसित प्रविधिहरूको सदुपयोगका लागि कृषि शिक्षा र कृषि प्रसारका निकायहरूसँग सहकार्यका क्षेत्रहरू तथा सो सम्बन्धमा कृषि अनुसन्धान क्षेत्रको आगामी कार्यदिशा	डा. विन च. कुँवर, वरिष्ठ वैज्ञानिक, नेपाल कृषि अनुसन्धान परिषद्, काठमाण्डौ
१०:००-१०:१५	संघीय संरचनामा तीन तहका सरकारहरूका बीच समन्वय तथा सहकार्यमूलक कृषि प्रसार रणनीति	डा. प्रकाश कुमार सज्जेल, सह सचिव, कृषि तथा पशुपन्छी विकास मन्त्रालय, काठमाण्डौ ।
१०:१५-१०:३०	संघीय संरचनामा कृषि शिक्षा, कृषि प्रसार र कृषि अनुसन्धानबीच समन्वयको खाका	डा. रामकृष्ण श्रेष्ठ, सह-सचिव, कृषि तथा पशुपन्छी विकास मन्त्रालय, काठमाण्डौ ।
१०:३०-११:००	बिद्यापान	
११:००-१२:००	छलफल	सबै सहभागीहरू
१२:००-०१:००	मन्तव्य तथा कार्यक्रम समापन	
१:००-	खाना तथा बिदाई	

कार्यक्रम संचालक : रामहरि तिमल्सिना, कृषि अर्थ विज्ञ, कृषि विकास निर्देशनालय

## आमन्त्रण पत्रहरू :



बागमती प्रदेश सरकार  
कृषि तथा पशुपन्छी विकास मन्त्रालय  
कृषि विकास निर्देशनाल

हेटौडा, मकवानपुर

प.सं. : २०७९/८०

च.सं. ३८९

मिति : २०७९/०८/१९

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विषय : अतिथ्यता सम्बन्धमा ।

प्रस्तुत विषयमा यस कृषि विकास निर्देशनालयको आयोजनामा "कृषि शिक्षा, प्रसार र अनुसन्धान बीचको समन्वयात्मक गोष्ठी" तपसिल बमोजिमको मिति, समय र स्थानमा हुन गईरहेको व्यहोरा अवगत गर्नुहुन अनुरोध छ। उक्त गोष्ठीमा अतिथिको रूपमा यहाँको उपस्थितिको लागि अनुरोध छ ।

तपसिल

मिति : २०७९/०८/२६

समय : बिहान ७:३० बजे

स्थान : होटेल पल्पसा, हेटौडा

भक्त प्रसाद बिहारी

नि. प्रमुख

नि. प्रमुख

पुनः यच जानकारीको लागि : जमुना आचार्य : ९८४४५९३४२८, डम्बर देवी चापागाई : ९८४४०६९०३२



बागमती प्रदेश सरकार  
कृषि तथा पशुपन्छी विकास मन्त्रालय  
कृषि विकास निर्देशनाल

हेटौडा, मकवानपुर

प.सं. : २०७९/८०

च.सं. ३८८

मिति : २०७९/०८/१९

श्री योजना महाशाखा प्रमुख व्  
कृषि तथा पशुपन्छी विकास मन्त्रालय  
हेटौडा

विषय : अतिथ्यता सम्बन्धमा ।

प्रस्तुत विषयमा यस कृषि विकास निर्देशनालयको आयोजनामा कृषि शिक्षा, प्रसार र अनुसन्धान बीचको समन्वयात्मक गोष्ठी" तपसिल बमोजिमको मिति, समय र स्थानमा हुन गईरहेको व्यहोरा अवगत गर्नुहुन अनुरोध छ। उक्त गोष्ठीमा अतिथिको रूपमा यहाँको उपस्थितिको लागि अनुरोध छ ।

तपसिल

मिति : २०७९/०८/२६

समय : बिहान ७:३० बजे

स्थान : होटेल पल्पसा, हेटौडा

भक्त प्रसाद बिहारी

नि. प्रमुख

नि. प्रमुख

पुनः यच जानकारीको लागि : जमुना आचार्य : ९८४४५९३४२८, डम्बर देवी चापागाई : ९८४४०६९०३२





बागमती प्रदेश सरकार  
कृषि तथा पशुपन्छी विकास मन्त्रालय  
**कृषि विकास निर्देशनालय**  
हेटौंडा, मकवानपुर

प.सं.०५९/८०

च.नं. ३४८

मिति-२०७९/०८/१३

श्री प्रा.डा.अर्जुन कुमार श्रेष्ठज्यू,  
कृषि तथा वन विश्वविद्यालय, रामपुर  
चितवन

विषय: कार्यपत्र प्रस्तुतीकरण सम्बन्धमा ।

प्रस्तुत विषयमा यस निर्देशनालयको आयोजनामा निकट भविष्यमा हेटौंडामा सन्चालन गर्ने तय भएको कृषि शिक्षा प्रसार तथा अनुसन्धानबीच समन्वयात्मक गोष्ठिमा यहाँबाट तपशिल बमोजिमको विषयमा कार्यपत्र प्रस्तुतीकरण गरिदिनु हुन अनुरोध छ । साथै प्रस्तुतीकरणको मिति र समय टेलिफोन मार्फत जानकारी गराउने व्यहोरा समेत अनुरोध छ ।

तपशिल:

क्र.सं.	कार्यपत्रको विषय	समय
१	नविनतम कृषि प्रविधिहरूको प्रयोग मार्फत खाद्य सुरक्षा प्रवर्धनका लागि कृषि क्षेत्रको भूमिका, कृषि अनुसन्धान र कृषि प्रसारसँग सहकार्यका क्षेत्रहरू तथा सो सम्बन्धमा कृषि शिक्षा क्षेत्रको आगामी कार्यदिशा ।	१५ मिनेट

सम्पर्क:

राजधर तिम्सिना, कृषि अधिकारी (९८४९८९२१६६)  
पवन सिंह भण्डारी, सपोर्ट कृषि प्रसार अधिकृत (९८४१८६५६७७)

भरत प्रसाद बिडारी  
निमित्त प्रमुख

निमित्त प्रमुख



बागमती प्रदेश सरकार  
कृषि तथा पशुपन्छी विकास मन्त्रालय  
**कृषि विकास निर्देशनालय**  
हेटौंडा, मकवानपुर

प.सं.०५९/८०

च.नं. ३४९

मिति-२०७९/०८/१३

श्री चित्र बहादुर कुँवरज्यू,  
राष्ट्रिय मकै वाली अनुसन्धान कार्यक्रम,  
चितवन ।

विषय : कार्यपत्र प्रस्तुतीकरण सम्बन्धमा ।

प्रस्तुत विषयमा यस निर्देशनालयको आयोजनामा निकट भविष्यमा हेटौंडामा सन्चालन गर्ने तय भएको कृषि शिक्षा प्रसार तथा अनुसन्धानबीच समन्वयात्मक गोष्ठिमा यहाँबाट तपशिल बमोजिमको विषयमा कार्यपत्र प्रस्तुतीकरण गरिदिनु हुन अनुरोध छ । साथै प्रस्तुतीकरणको मिति र समय टेलिफोन मार्फत जानकारी गराउने व्यहोरा समेत अनुरोध छ ।

तपशिल:

क्र.सं.	कार्यपत्रको विषय	समय
१	बागमती प्रदेशमा खाद्य सुरक्षा प्रवर्धनका लागि विकसित नविनतम कृषि प्रविधिहरू, विकसित प्रविधिहरूको सदुपयोगका लागि कृषि शिक्षा र कृषि प्रसारका निकायहरूसँग सहकार्यका क्षेत्रहरू तथा सो सम्बन्धमा कृषि अनुसन्धान क्षेत्रको आगामी कार्यदिशा	१५ मिनेट

सम्पर्क:

राजधर तिम्सिना, कृषि अधिकारी (९८४९८९२१६६)  
पवन सिंह भण्डारी, सपोर्ट कृषि प्रसार अधिकृत (९८४१८६५६७७)

भरत प्रसाद बिडारी  
निमित्त प्रमुख

निमित्त प्रमुख



बागमती प्रदेश सरकार  
कृषि तथा पशुपन्छी विकास मन्त्रालय  
**कृषि विकास निर्देशनालय**  
हेटौंडा, मकवानपुर

प.सं.०५९/८०

च.नं. ३४०

मिति-२०७९/०८/१३

श्री प्रकाश कुमार सन्जेलज्यू,  
कृषि तथा पशुपन्छी विकास मन्त्रालय,  
सिंहदरवार काठमाण्डौ ।

विषय: कार्यपत्र प्रस्तुतीकरण सम्बन्धमा ।

प्रस्तुत विषयमा यस निर्देशनालयको आयोजनामा निकट भविष्यमा हेटौंडामा सन्चालन गर्ने तय भएको कृषि शिक्षा प्रसार तथा अनुसन्धानबीच समन्वयात्मक गोष्ठिमा यहाँबाट तपशिल बमोजिमको विषयमा कार्यपत्र प्रस्तुतीकरण गरिदिनु हुन अनुरोध छ । साथै प्रस्तुतीकरणको मिति र समय टेलिफोन मार्फत जानकारी गराउने व्यहोरा समेत अनुरोध छ ।

तपशिल:

क्र.सं.	कार्यपत्रको विषय	समय
१	संघीय सरकारमा तीन तहका सरकारहरूको बीच समन्वय तथा सहकार्यमूलक कृषि प्रसार रणनीति	१५ मिनेट

सम्पर्क:

राजधर तिम्सिना, कृषि अधिकारी (९८४९८९२१६६)  
पवन सिंह भण्डारी, सपोर्ट कृषि प्रसार अधिकृत (९८४१८६५६७७)

भरत प्रसाद बिडारी  
निमित्त प्रमुख

निमित्त प्रमुख



बागमती प्रदेश सरकार  
कृषि तथा पशुपन्छी विकास मन्त्रालय  
**कृषि विकास निर्देशनालय**  
हेटौंडा, मकवानपुर

प.सं.०५९/८०

च.नं. ३४६

मिति-२०७९/०८/१३

श्री रामकृष्ण श्रेष्ठज्यू,  
कृषि तथा जैविक विविधता संरक्षण केन्द्र  
सल्लिचौर ।

विषय : कार्यपत्र प्रस्तुतीकरण सम्बन्धमा ।

प्रस्तुत विषयमा यस निर्देशनालयको आयोजनामा निकट भविष्यमा हेटौंडामा सन्चालन गर्ने तय भएको कृषि शिक्षा प्रसार तथा अनुसन्धानबीच समन्वयात्मक गोष्ठिमा यहाँबाट तपशिल बमोजिमको विषयमा कार्यपत्र प्रस्तुतीकरण गरिदिनु हुन अनुरोध छ । साथै प्रस्तुतीकरणको मिति र समय टेलिफोन मार्फत जानकारी गराउने व्यहोरा समेत अनुरोध छ ।

तपशिल:

क्र.सं.	कार्यपत्रको विषय	समय
१	संघीय सरकारमा कृषि शिक्षा, कृषि प्रसार र कृषि अनुसन्धानबीच समन्वयको खाका	१५ मिनेट

सम्पर्क:

राजधर तिम्सिना, कृषि अधिकारी (९८४९८९२१६६)  
पवन सिंह भण्डारी, सपोर्ट कृषि प्रसार अधिकृत (९८४१८६५६७७)

भरत प्रसाद बिडारी  
निमित्त प्रमुख

निमित्त प्रमुख

उपस्थिति :

कृषि विकास निर्देशनालय बागमती प्रदेशको आयोजनामा मिति २०७९/०८/२६ गते हेटौडाको होटेल पल्पसामा आयोजित कृषि शिक्षा, प्रसार तथा अनुसन्धानबीच समन्वयात्मक गोष्ठीमा सहभागीहरुको विवरण

क्र.सं.	नाम	कार्यालय	पद	सम्पर्क नं	हस्ताक्षर
१	मा. वसुन्धरा हुमापाई	कृषि तथा पशुपन्दी वि. प्र.	मन्त्री		
२	मा. इन्द्रमाया गुरुङ	"	राज्यमन्त्री		
३	श्री शरण कु. पाण्डे	"	सचिव		
४	श्री भरत प्र. विडारि	कृषि विकास निर्देशनालय	नि. निदेशक		
५	श्री राजेन्द्र देव पाण्डे	जि. प्र. का.	प्र. जि. अ.	९८२२०२४६	
६	श्री अर्जुन कु. श्रेष्ठ	शुचिताया वन वि. वि.	अ. तथा प्र. निदेशक	९८५०२२६५९	
७	श्री रामकृष्ण श्रेष्ठ	वा. वि. तथा कृ. वि. वि.	सह. सचिव	९८५०२२०००	
८	श्री चित्र न. कुवर	राजकीय खेतीबानी वि. वि.	प्रमुख		
९	आलोकनाथ श्रेष्ठ	कृ. वि. वि. वि. वि.	प्रमुख	९८५०२२०००	
१०	हरि प्रसाद डमाधाम	पशुपन्दी वि. वि.	प्र. वि. वि.	९८५०२२०००	
११	दीप शंकर विष्ट	कृ. वि. वि. वि. वि.	वि. वि. वि.	९८५०२२०००	
१२	विमल बहादुर कुँडेल	कृ. वि. वि. वि. वि.	वि. वि. वि.	९८५०२२०००	
१३	कुलादिप बिमिरे	कृ. वि. वि. वि. वि.	वि. वि. वि.	९८५०२२०००	

क्र.सं.	नाम	कार्यालय	पद	सम्पर्क नं	हस्ताक्षर
१४	राजेश्वर आचार्य	कृषि तथा पशुपन्दी वि. प्र.	सचिव	९८५०२२०००	
१५	अनूप अधिकारी	कृ. वि. वि. वि. वि.	कृ. वि. वि.	९८५०२२०००	
१६	सरिता बहाल	NNTV	प्रमुख	९८५०२२०००	
१७	अरुण बहाल	कृ. वि. वि. वि. वि.	कृ. वि. वि.	९८५०२२०००	
१८	प्रदीप कुमार बहाल	कृ. वि. वि. वि. वि.	कृ. वि. वि.	९८५०२२०००	
१९	विप्लव कृष्ण लामिछाने	कृ. वि. वि. वि. वि.	कृ. वि. वि.	९८५०२२०००	
२०	सुजन कुँडेल	कृ. वि. वि. वि. वि.	कृ. वि. वि.	९८५०२२०००	
२१	मित बहादुर पुन	कृ. वि. वि. वि. वि.	कृ. वि. वि.	९८५०२२०००	
२२	अरुण पन्थी	कृ. वि. वि. वि. वि.	कृ. वि. वि.	९८५०२२०००	
२३	दिपा शंकर	कृ. वि. वि. वि. वि.	कृ. वि. वि.	९८५०२२०००	
२४	मैसा श्रेष्ठ	IAAS	Extension Director	९८५०२२०००	
२५	राजेश बहाल	पशुपन्दी वि. वि.	प्रमुख	९८५०२२०००	
२६	डा. जनार्दन स्वस्का	पशुपन्दी वि. वि.	प्रमुख	९८५०२२०००	
२७	जयन सिंह श्रेष्ठ	कृ. वि. वि. वि. वि.	कृ. वि. वि.	९८५०२२०००	
२८	आर्षाद कुँडेल	कृ. वि. वि. वि. वि.	कृ. वि. वि.	९८५०२२०००	

क्र.सं.	नाम	कार्यालय	पद	सम्पर्क नं.	हस्ताक्षर
२९	इंदर राजा	प्रदेशीय शाखा	मालक	984506734	
३०	प्रेम काकी	AFLU - 17	11		
३१	प्रेम कुमार जोषी	कृषि जल संवर्धन	इ.स.सी	9885442865	
३२	मनिषा चापा	प्रदेशीय प्रशासनिक	PSO	9840458316	
३३	सुब्रह्मण्य	कृषि जल संवर्धन	कृषि	980393437	
३४	श्रीमती कुमारी काकी			984609965	
३५	डॉ. इमरान	जनपद डेप्युटी	सामर्थ	982066669	
३६	सुमित्रा अग्रवाल	कृषि जल संवर्धन	इ.स.सी	984609965	
३७	शोभा व. कौसर	PSO	इ.स.सी	986585494	
३८	विष्णु क. कल	कृषि प्रशासन	इ.स.सी	982052822	
३९	राजकुमार शिंदे				
४०	राजेश विमलेश	इ.स.सी	इ.स.सी	984922162	
४१	इंदर देवी चापागाई	कृषि	इ.स.सी		
४२	सुब्रह्मण्य			981770983	
४३	काली प्रसाद कुलकर्णी			984492356	

क्र.सं.	नाम	कार्यालय	पद	सम्पर्क नं.	हस्ताक्षर
४४	गिता फुलाना दिगमई	कृषि जल संवर्धन	का.स		गिता
४५	अमर गोप	कृषि जल संवर्धन	का.स	984999598	
४६	शोभा कौसर				
४७	साधव पांडे				
४८	सवित्रा त्रिभुवानी		अधीन	988256188	
४९	सुब्रह्मण्य				
५०	विष्णु राज फुलाना	कृषि जल संवर्धन	निर्देशक	987260888	
५१	डॉ. सवित्रा त्रिभुवानी	कृषि जल संवर्धन	क.वि.स.	9845023131	
५२	राम प्रसाद पांडे	कृ.जा.के.सिखली	प्रा.स.	983288255	
५३	कुल कु. देवी	कृषि जल संवर्धन	का.स	985661459	
५४	सावित्रा दिगमई	कृ.वि.वि	का.स	9864522660	
५५	प्रसिद्धा विडारी	कृ.वि.वि	काम	9865502084	
५६					
५७					
५८					

तस्विरहरुः



