

**JOINT WORK PLAN
BETWEEN
THE INDIAN COUNCIL OF AGRICULTURE RESEARCH (ICAR),
AND
THE KAZAGROINNOVATIONS JSC (KAI), KAZAKHSTAN
IN THE FIELD OF AGRICULTURAL RESEARCH AND
EDUCATION FOR THE YEARS 2016-2017**

In pursuance of Article II of the Memorandum of Understanding for cooperation in the field of Agricultural Research and Education between the Indian Council of Agricultural Research (ICAR), New Delhi, India and the KazAgroInnovations JSC (KAI), signed in Kazakhstan on 31st of May, 2012, both Parties have agreed on the following Work Plan for the years 2016-2017.

ARTICLE –I

The Work Plan will be implemented by the Indian Council of Agriculture Research (ICAR) on behalf of the Government of the Republic of India and by the KazAgroInnovations JSC (KAI), Kazakhstan – special institute providing Governmental support in development of agricultural science of the Republic of Kazakhstan.

ARTICLE –II

The scientific and technical cooperation, exchange of information and materials between both the countries shall be implemented in the fields referred to at Annexures I,II,III, IV of this Work Plan.

ARTICLE –III

The Parties agree to coordinate and conduct joint research projects/activities that may be mutually identified.

ARTICLE –IV

The financial terms and conditions will be governed by the Article VIII of the Memorandum of Understanding.

III. Germplasm Exchange

1. Fruit crops: Apple (Aport, Zarya, Alatau, Saltanat, Sinap Almatinskii, Pestrushka, Ivanovka, Vydubetskaya Plakuchaya), pomegranate (resistance to abiotic and biotic stresses), wine and table grape varieties and rootstock.
2. Vegetables crops: Tomato (TYCLV resistance and Quality traits), chilli (Anthracnose and Leaf curl resistance), capsicum, pea (Earliness and Powdery Mildew), French bean (vegetables type and virus resistance), brinjal, onion, carrot, melons and cauliflower.

14. Development of genomic resources for biotic and abiotic in wheat, soybean, mustard and sunflower
15. Isolation and cloning of drought resistance transcription factors of wheat cultivars C306
16. Carrying out of joint research works on assessment of carbon deposition using benchmark soil
17. Testing and implementation of nanoagromelliorative methods for increasing soil effectiveness and agricultural crops productivity in climatic conditions of India.
18. Carrying out of joint research and exchange by specialists on watersaving technologies and irrigation systems; amelioration and water supply of pastures.

II. Collaborative Research Activities

1. Collaborate and guide the Scientists of Kazakhstan in the area of PHT of Vegetables and grapes.
2. Canopy architectural engineering in apples for higher productivity and efficient utilization of natural resources
3. Exchange by germplasm of vegetables and experience in selection (hybrid forms of onion and tomato using aseptic form), especially on creating apyrene triploid, Kazakh Research Institute on Vegetables and Potato with IIHR, Bangalore and IIVR, Varanasi.
4. Exchange by genefund and experience in selection of tomato, cucumber, pumpkin, carrot and other vegetables with high content of vitamin C, lycopene, carotinoid, tolerant to the most disease, heat and dry resistant, Kazakh Research Institute on Vegetables and Potato with IIHR, Bangalore and IIVR, Varanasi.
5. Exchange by experience in developing mineral nutrition and resource saving technologies for vegetables growing and protection, Kazakh Research Institute on Vegetables and Potato with IIHR, Bangalore and IIVR, Varanasi.
6. Exchange by experience in growing perspective varieties of vegetables (tomato, sweet pepper, brinjal, cucumber) tolerant to the highly dry conditions, disease and insects and resource saving technologies on vegetables growing and protection.
7. Studying of experience on artificial inseminations of camels, goats, horses, identification of accurate time for insemination of cattle.
8. Studying of experience for embryos transplantation.
9. Studying of the best selection and genetical methods of milk yield increase.
10. Studying of hides processing technology.
11. Studying of experience of hormones regulations for increasing the egg production, detecting early pregnancy of equines.
12. Studying of experience on monitoring and necessary of degraded pastures for rational management.
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6.	Fish Processing, product developmental, Quality Control & hygiene protocols, Value Addition and Packaging Technology	Study visit	1 week	1	2016-2017	Kazakh Research Institute on fishing /KAI	CIFT, Kochi
7.	Manpower Development, capacity building and skill upgradation in Specialized disciplines through academic exchange & training programmes	Study visit	1 week	1	2016-2017	Kazakh Research Institute on fishing /KAI	CIFE, Mumbai
8.	Exchange and improvement of germplasm in wheat, mustard, soybean, sunflower and forage crops	Study visit	7 days	2	2016-2017	Kazakh Research institute for Agriculture and plant Breeding	DWR, Karnal DMR, New Delhi IGFRI, Jhansi DOR, Hyd. DRM, Bharaptur DSR, Indore
9.	Development /identification of genomic resources for biotic, and abiotic stresses in wheat, soybean, mustard and sunflower	Study visit	1 week	1	2016-2017	Kazakh Research institute for Agriculture and plant Breeding, Eastern Kazakhstan Agricultural research institute Scientific and production center for grain farming	DWR, Karnal. NRCPB, New Delhi, DMR, New Delhi, DRM Bharaptur, DSR, Indore

Annexure –II

Training /Study visits of Scientists from Kazakhstan to India

No	Subject area	Nature of visit	Duration (days)	Number of participants	Implementation Schedule	Institution	
						sending	receiving
1.	Cryopreservation of fish gametes	Study visit	1 week	1	2016-2017	Kazakh Research Institute on fishing /KAI	NBFGR, Karnal
2.	Freshwater Aquaculture – finfish/selfish hatchery & grow-out culture and farm management	Study visit	1 week	1	2016-2017	Kazakh Research Institute on fishing /KAI	CIFA, Bhubaneswar
3.	Fishing craft and gear designing, fabrication, improvisation for diversifies and conservation fishing in inland water	Study visit	1 week	1	2016-2017	Kazakh Research Institute on fishing /KAI	CIFT, Kochi
4.	Reservoir fisheries management /Culture Based Fisheries Management	Study visit	1 week	1	2016-2017	Kazakh Research Institute on fishing /KAI	CIFRI, Barrackpore
5.	Hatchery technology and Grow-out Culture of Trout	Study visit	1 week	1	2016-2017	Kazakh Research Institute on fishing /KAI	DCFR, Bhimtal

6.	Fish Processing, product developmental, Quality Control & hygiene protocols, Value Addition and Packaging Technology	Study visit	1 week	1	2016-2017	CIFT, Kochi	Kazakh Research Institute on fishing /KAI
7.	Manpower Development, capacity building and skill upgradation in Specialized disciplines through academic exchange & training programmes	Study visit	1 week	1	2016-2017	CIFE, Mumbai	Kazakh Research Institute on fishing /KAI
8.	Germplasm identification, noval germplasm conservation strategies including in vitro and cryo-preservation	Study visit	5 days	3	2016-2017	CITH, Srinagar IIVR, Varanasi DFR, New Delhi	Kazakh Research institute on agriculture and plant breeding
9.	Protected cultivation of vegetables and floricultural crops	Study visit	5 days	3	2016-2017	Varanasi DFR, New Delhi	Kazakh Research Institute on potato and vegetables

Annexure –I

I. Training/ Study Visits of Indian scientists to Kazakhstan

Sl. No	Subject area	Nature of visit	Duration (days)	Number of participants	Implementation Schedule	Institution	
						sending	receiving
1.	Cryopreservation of fish gametes	Study visit	1 week	1	2016-2017	NBFGR, Karnal	Kazakh Research Institute on fishing /KAI
2.	Freshwater Aquaculture – finfish/selfish hatchery & grow-out culture and farm management	Study visit	1 week	1	2016-2017	CIFA, Bhubaneswar	Kazakh Research Institute on fishing /KAI
3.	Fishing craft and gear designing, fabrication, improvisation for diversifies and conservation fishing in inland water	Study visit	1 week	1	2016-2017	CIFT, Kochi	Kazakh Research Institute on fishing /KAI
4.	Reservoir fisheries management /Culture Based Fisheries Management	Study visit	1 week	1	2016-2017	CIFRI, Barrackpore	Kazakh Research Institute on fishing /KAI
5.	Hatchery technology and Grow-out Culture of Trout	Study visit	1 week	1	2016-2017	DCFR, Bhimtal	Kazakh Research Institute on fishing /KAI

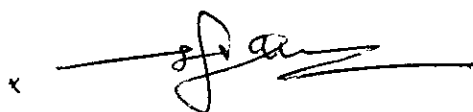
ARTICLE -V

The Parties may modify, add, delete or cancel any item under the present Work Plan by mutual written consent.

ARTICLE -VI

The Work Plan shall take effect from the date of its signing and shall remain in force until 31st December, 2017.

Signed at ASTANA on 7, JULY 2015 in two originals, each in English and Russian languages, all texts being equally authentic. In case of divergence in interpretation, the English text shall prevail.



FOR INDIAN COUNCIL OF AGRICULTURAL RESEARCH (ICAR), NEW DELHI, INDIA



FOR KAZAGROINNOVATION JSC (KAI), KAZAKHSTAN