

Activities undertaken by ICAR to address farmers' problems and assist civil administration to fight against the COVID-19 pandemic

DARE/ICAR has responded to the challenges posed by COVID-19 Pandemic to farmers and farming sector across the country in tune with the policy directions and guidelines issued by the Government of India to all the States and UTs.

A. Advisory to farmers & other stakeholders:

Taking note of the occurrence of the Corona-19 pandemic to coincide with critical farm operations in agriculture and allied sectors, ICAR through its countrywide network of Research Institutes, KVKs also supported by Agricultural Universities alerted the farmers and stakeholders across the country on the pre-cautions, safety measures and need for social distancing while carrying out the time bound field operations such as harvesting, post-harvest processing, storage and marketing of grains, fruits, vegetables, eggs, meat and fish.

ICAR issued National and state-specific advisory for farmers (Annexure-I), translated into 15 regional languages and widely communicated through digital platforms. An e-Book documenting the advisories at the national and state level has also been prepared. The advisories received prime coverage in print, electronic and social media across the country including DD Kisan and other channels.

More than **5.48** crore farmers were reached through issue of **1126** advisories across the states (Table 1).

Table 1: mKisan Portal messages disseminated from 25.03.2020 to 10.04.2020 by KVKs

States	No. of advisory	No. of messages
ANDHRA PRADESH	52	4704340
ARUNACHAL PRADESH	2	550
ASSAM	55	290571
BIHAR	22	426060
CHHATTISGARH	54	3899528
GUJARAT	49	972111
HARYANA	11	643128
HIMACHAL PRADESH	13	341118
JAMMU AND KASHMIR	6	5192
JHARKAND	17	761618
KARNATAKA	86	3504283
KERALA	9	24533
MADHYA PRADESH	179	6283933
MAHARASHTRA	80	4599638
MANIPUR	15	1997
MEGHALAYA	7	1264
NAGALAND	2	370
ODISHA	65	7698779
PUNJAB	7	45452
RAJASTHAN	23	4037024
SIKKIM	9	8807
TAMIL NADU	237	1949886
TELANGANA	21	1684313
TRIPURA	1	2648

UTTAR PRADESH	76	11046428
UTTARAKHAND	4	5907
WEST BENGAL	27	1857591
Total	1126	54797069

Dissemination of advisory was also made through WhatsApp groups, newspapers, radio and TV channels by KVKs. KVKs and KVK scientists are also disseminating advisories through Facebook. The advisories have been put up in ICAR website and KVK portal where lakhs are registered and downloading the advisories. Advisories have been disseminated to a total of 13.82 lakh farmers. Out of these, 5.75 lakh farmers have been covered through 4893 KVK WhatsApp groups and 8.06 lakh farmers reached through other digital platforms. Besides, 936 news items on advisories issued by KVKs appeared in newspapers; messages were disseminated through broadcast of 193 radio talks and 57 TV programs. In addition, KVKs have also sent the advisories to state department and private extension network for faster dissemination for rapid and wider coverage to their group members.

KVKs disseminated the message for use of Aarogya Setu mobile application to fight COVID 19 pandemic to **43.33** lakh farmers which has been downloaded by **4.27** lakh farmers.

For operating the essential services at the Institutes and KVKs, disinfectants (e.g. sodium hypochlorite) are being used to sanitize institute labs, offices and premises. Hand sanitizers, face masks, etc. have been distributed to all staff and contractual and at times outside the campus also. The summary of activities by one group of institutions is provided as Annexure II. Specific advisories are also being provided to farmers by ICAR institutes as highlighted below:

Field Crops:

- All the queries of state department of Agriculture are being responded immediately. In one such instance pictures of diseased wheat plant were received. Fusarium disease in wheat was identified in this crop and control major was advised to the farmers as well as CAO, Almora through WhatsApp and phone call.
- ICAR- Indian Institute of Seed Science Mau, is providing advisory to farmers seed producing farmers under participatory seed production programme regarding wheat harvest. Farmers interested to take up Zaid crop after wheat are being advised about suitable crops and other aspects including seed availability through institute website, WhatsApp and personal messages also involving KVK network.
- ICAR- Indian Institute of Pulse Research, Kanpur is providing advisories, awareness and safety measures among pulse farmers who were made aware of current agricultural operations/activities to be undertaken and the disease spread through various pulses apps (*Chana Mitra*, *PulsExpert* system, *Krishi app*, *Dalhan Gyan*) as well as through personal Communication & WhatsApp etc.
- The ICAR- Indian Institute of Millets Research, Hyderabad has networked with Farmer producer organizations with our outreach units of scientists linking with SHGs, FPOs in 7 different states namely, Karnataka, Andhra, Telangana, Tamil Nadu, MP, Maharashtra, Odisha and Rajasthan. Institute is helping farmers' groups in facilitating small Millets processing through link farmers. The FPOs and SHGs are also linked to food processors and entrepreneurs through our Network on the platform of NUTRIHUB - our NUTRICEREAL Agribusiness Incubation Centre. IIMR has

also purchased millets from FPOs for value addition programmes and linked others including few supermarkets also to them to dispose their produce. Seed hubs are energized apart from adequate breeder seed availability for seed enterprises, community seed system partners, NGOs and Tribal programme and NEH implementation points through our AICRP networks and Department of Agriculture.

- ICAR-NRRI, Cuttack is providing special fortnightly advisory service (Apr 1 - 15, 2020) was provided by the institute. Block wise agro-met advisory bulletins (twice a week) are being provided by KVK Cuttack under NRRI. Latest bulletin was issued on Apr 3, 2020. Advisories are also extended through the online Technology Application RiceXpert for rice crop management during the lockdown.
- Technological backstopping is provided through RiceXpert platform and through WhatsApp as well as through phone calls.
- ICAR-NCIPM, New Delhi is implementing ICT based pest surveillance programme in Maharashtra (in different cereal and horticultural crops) and Haryana (vegetables) and issuing advisories to farmers regarding plant protection measures.
- ICAR- IIMR, Ludhiana has provided advisory regarding, Maize crop being grown in different regions of the country as Rabi maize and spring maize
- ICAR- Indian Institute of Oilseeds Research, Hyderabad has provided advisories on plant protection measures and mechanized harvesting to all possible oilseed farmers through mobile apps and messages.
- ICAR-CRIJAF, Barrackpore has issued agro-advisory and safety measures to be followed regularly in its website (<http://www.crijaf.org.in/>). for the benefit of farming community of jute and allied fibres. These advisories have also been emailed to State governments in local language. During lockdown period, ICAR-CRIJAF is providing technology backstopping to farming community of different villages in West Bengal and Odisha directly benefitting over 800 farmers of Jute and allied farming. Scientist are engaged in 2-ways communication with farmers and extension workers for pest & disease diagnosis, pest and disease management information for jute and allied fibre technology through a mobile app.
- National Institute for Biotic Stress Management, Raipur is assisting the farmers through five Custom Hiring Centers (CHCs) at village level, to cater their needs of farm implements during harvesting.
- ICAR-Central Institute of Cotton Research, Nagpur is advising farmers to undertake farm activities such as uprooting of cotton stocks, cleaning of fields and preparing for the next crop season. ICAR-CICR advises the farmers to prepare their fields and get the seeds ready for the next crop. The Institute has been undertaking training programmes for farmers wrt. seed production, cotton production and protection strategies.
- The Institute has taken up seed production programme of newly released Bt varieties and *desi* cotton varieties and Non- Bt *G. hirsutum* varieties. These varieties seeds (About 15-20 quintals) shall be distributed to small and marginal farmers to offset seed cost and shall contribute to the society.
- ICAR- IGFR, Jhansi has extended advisories on fodder crops, harvesting, seed production and conservation by using mKISAN portal to the farmers.

Horticultural Crops:

- ICAR- NRC on Seed Spices Ajmer Advised farmers for proper post-harvest handling and protecting the harvested crop (cumin, coriander, ajwain and fenugreek) from occasional rain/wind and suggested for Farm level processing and value addition. Fennel and dill crop are nearing to maturity and proper care should be taken to prevent Ramuleria blight and Powdery mildew at this stage. Farmers may provide light irrigation to fennel and dill, if there is dryness in soil.
- ICAR-CCRI, Nagpur provided management strategies of Ambia crop (Spring blossom) of citrus fruits, with respect to irrigation and nutrient management, Control of fruit drop using PGRs & nutrient sprays and need based plant protection measures
- ICAR-CIAH, Bikaner, advised the farmers of date palm pollination, management strategies in pomegranate, virus management strategies in Kachri, snapmelon, watermelon, muskmelon, long- melon, ridgegourd and bottlegourd etc, use of fruit fly traps in fruit crop orchards
- ICAR-CISH, Lucknow prepared advisories for mango and guava for different regions. Advised the farmers of the Sohawal and Bihar regarding the rescheduling of the ICAR- FUSICONT application with the available material with them for banana. A total number of 12,000 bio immunized TC plants of banana were rescued and proliferated.
- ICAR-CITH, Srinagar has prepared advisory for the farmers engaged in temperate horticulture for the next 2 weeks.
- ICAR-CIARI, Port Blair issued state level advisory to the farmers on field & horticulture crops, animal, fisheries sciences to sustain the agriculture and allied sector activities in the Islands for protecting the livelihood and to ensure food and nutritional security in the lockdown. Specific crop advisories on home scale VCO production, mango value addition, dehydrated vegetables, multipurpose trees, poultry feed preparation and goat management were issued in print media. The Institute also issued state level advisory for Lakshadweep islands on coconut management, fisheries sector and animal management.
- ICAR-CPCRI, Kasaragod provided the crop advisories on coconut, arecanut and cocoa for the months of April-May were prepared to benefit the farming community. The crop advisory has been made available to the extension personnel through ATMA and state department of Agriculture/Horticulture/CDB. KVK Alappuzha has been keeping a mobile help-line service (9447790268).
- The ICAR-CTCRI, Thiruvananthapuram and Regional Centre at Bhubaneswar have donated 530 kg cassava tubers, 100kg elephant foot yam tubers, 260 kg yam tubers, 60 kg taro tubers and 60 kg sweet potato to 'Community Kitchens' run by nine group of beneficiaries including Municipality Corporation, Panchayats, NGOs, and poor people, police personals inThiruvananthapuram and Bhubaneswar. Also, 40 kg rice, 3 kg each of greengram and toor dal, 6 lit veg. oil and 11 kg each of potato and onion donated to Municipality Corporation, Thiruvananthapuram.
- ICAR-DFR, Pune prepared a general and crop specific advisory for the benefit of the farmers with tips for converting unsold flowers into value added products. The advisory is sent to the local press as Floriculture sector is badly hit.

- ICAR-DMAPR, Boriavi provided the status of harvesting of some of the MAP species in different states for the traders. Issued advisory measures to the farmers and stalk holders through institute website, “Herbal Kisan”- mobile App, emails, WhatsApp, phones, publishing news in newspapers, etc. It also provided hygiene materials and masks to police, corona Warriors, doctors, and other persons involved in serving the patients/public.
- ICAR-DMR, Solan, has prepared advisory for Mushroom Growers during lockdown period because of covid-19.
- ICAR-IIHR, Bangaluru provided dry flower technology to farmers through which dry petals of different flowers which are not marketable during lockdown to make natural colours. Institute has provided details of immune boosting fruits and vegetables including Amla, oranges, Pink fleshed guava, tomato, capsicum, Watermelon, pomegranate, Drumstick or Moringa and Green leafy vegetables (GLV): GLVs such as Amaranthus, Methi, Spinach, Shepu, Basella besides mushrooms for enabling the public to use them liberally to help the horticulture farmers.
- ICAR-IISR, Kozhikode, provided the advisory on crop production and protection at various phenological stages for black pepper, Cardamom, Ginger and Turmeric, Nutmeg and Vanilla for various states. At the sales outlet of the main campus of ICAR-IISR, Kozhikode, a facilitation sales counter of fruits like elite mango varieties (Alphonso, Sindhur, Banganappalli), Pineapple and banana procured from Horticultural Corporation, a Government of Kerala undertaking was arranged.
- ICAR-IIOPR provided advisories on irrigation and fertigation management of oil palm plantations, following practice of ablation in juvenile plantations, mulching with oil palm and other available bio wastes and harvesting of ripened bunches with aluminium pole attached with a sickle, management of RSW (Rugose spiralling whitefly). The advisory for soil and leaf collections was also provided for proper nutrient management.
- ICAR-IIVR, Varanasi, provided advisories on the cultivation of seasonal vegetables during the months of April- May. Added the advisory on crop production and protection on various vegetables viz., Viz., cucumber, watermelon, bitter gourd, bottle gourd, muskmelon, pumpkin as it's the time of flowering and fruiting. In view of the increasing trend of temperature it is suggested for irrigation @ 4-5 days' interval. Care should be taken for the honey bee population for achieving required pollination.
- ICAR-NRC for banana, Tiruchirappalli, has prepared contingency plan for Banana growers.
- NRC for grapes, Pune, is issuing advisories for farmers for undertaking appropriate action depending upon their vineyard status. The advisory is available on institute website <https://nrcgrapes.icar.gov.in/>. For wider circulation, the advisories are also sent to 22 WhatsApp group of different grape grower association with approximately 3200 members.
- NRC for Litchi, Muzaffarpur gave the advisories to litchi growers with respect to stage wise operations pertaining to crop production and protection aspects for various litchi growing states as at some locations fruit setting is seen while in other parts full flowering is noticed. Also shared the contact numbers to address the farmers queries.
- ICAR-DOGR developed and provided advisories to mitigate the effect of COVID-19 to the farmers through WhatsApp besides unloading in the institute website.

- NRC on Pomegranate, Solapur has Mobile App ‘Solapur Anar’ in six languages. It is also sharing advisories on specific problems through its WhatsApp groups namely; Pomegranate Knowledge Group, Rajasthan Pom Growers, Agri Solutions, Farmers Production Group, Agrowon Solapur Group, Dalimb knowledge Group and Pomegranate International Group etc. The Centre is also attending calls of individual farmers and answering their specific queries through calls and WhatsApp. Around 1200 farmers were benefitted.
- NRC on Pomegranate, Solapur has prepared Pomegranate Advisory for April-May in Hindi, English & Marathi the details are uploaded at the NRCP website and can be viewed at <http://nrcpomegranate.icar.gov.in/files/Advisory/47.pdf>
- NRC for Orchids, Gangtok indicated the status of cut flowers and pot plants of early season cymbidium orchids. Also took measures to help the orchid growers in the state with newspaper article on taking care of cymbidium orchids.
- ICAR-Directorate of Cashew Research, Puttur has issued agro-advisories and safety measures to be followed by the cashew farmers while undertaking the seasonal activity of harvesting and post-harvest handling. The other seasonal activities such as nursery operations and pruning were also included in the advisories. The advisories have been advertised through institute website, WhatsApp group of cashew farmer community and through print media.

Natural Resource Management and Engineering:

- ICAR-Indian Institute Water Management, Bhubaneshwar provided Agro-Advisory to the farmers (about 2000 nos.) of different blocks in Odisha. Advisories on water management have also been uploaded in website of ICAR-IIWM besides circulating among farmers and other stakeholders through social media. Agro-advisories are also being given to the farmers through 26 centres of AICRP on Irrigation Water Management spread across the country on staggered harvesting, weather forecast. The institute has also listed various measures to be taken by the farmers to minimize the risks related to water management during prevailing COVID-19 situation.
- ICAR CAZRI, Jodhpur is providing advisories issued by Central & State Governments and local administrations among the institute employees/ residents and the farming community. A new separate tab “Corona Awareness” has been created on the institute website and all awareness matters pertaining to coronavirus has been uploaded. State-specific farming operation advisory issued by ICAR has been translated in Hindi and uploaded on the website. The institute also provided seven utility vehicles along with the drivers to district administration at Jodhpur to render the essential services like food distribution to poor and needy.
- ICAR- CRIDA, Hyderabad is Providing information to ICAR (on daily basis) rainfall situation in the country and weather forecast for next five days in 36 sub-meteorological divisions in the country along with agro-met advisory, providing agro-met advisories to farmers and other stakeholders on daily basis in local languages in various states. The farm equipment at Custom hiring centres of NICRA adopted cluster villages are being made available to farmers and the necessary precautions for handling of the equipment for further spread of the virus are being issued and some of the them demonstrated. Advisory for taking up of farm operations are being given to the farmers in NICRA villages in local languages.

- ICAR- CSSRI, Karnal is providing advisories, awareness and safety measures among farmers of salt affected regions. They were made aware of harvesting operations of Indian mustard and wheat and other agricultural operations/activities to be undertaken during this period through WhatsApp groups etc. to around 500 farmers on daily basis.
- ICAR- NBSS&LUP, Nagpur and its centres all over the country provided advisories to the Institute staff & the farming community on various safety aspects as well as the crop related advisories. Institute also trained and helped to prepare sanitizer for PHED workers who prepare and provide it to the local administration of Majuli district, Assam. ICAR- NBSS&LUP also deputed 4 institute vehicles along with drivers to the City Administration of Nagpur to help the health workers of Nagpur district to contain Covid-19 pandemic.
- ICAR- CAFRI, Jhansi advised farmers in DFI villages (7 districts of Bundelkhand U.P) regarding harvesting guidelines and the safety guidelines through Arogyasetu App.
- ICAR Research Complex for NEH Region, Umiam and its Centres across NEH, region, are providing agro-met advisories along with suggestions and contingency plans to protect the crops in field, and health precaution measures through websites, print media and social media sites. These advisories saved the crops of farmers from vagaries of whether (thunderstorms) especially in Tripura and Meghalaya. Farmers of adopted villages were supported in safe marketing of perishable farm produce (strawberry, vegetables, fruits). Medical Dispensary and guest house facilities of the institute were made available to contractual staff and people engaged in essential banking services in the state. Besides, ICAR NEH has been identified as one of the possible COVID-19 testing Centres in the State. Our institute has capacity to test almost 400 samples per day.
- ICAR-NIASM, Baramati created awareness among the farm labourers, security staff and others by involving Authorized medical doctor. The institute scientists are continuously in touch with the farmers and providing necessary advisories telephonically. The institute is regularly organizing video conferencing with the scientists, technical and other staff on daily basis. The institute has also prepared a document on impacts and remedies of national lockdown on agriculture.
- ICAR- RCER, Patna is providing advisory to farmers through farmer producer organization-(FPO) for wheat harvest and sowing of mung bean, for which seed is also being provided by the Institute. The institute through the KVKs administered by it, is assisting the farmers through five Custom Hiring Centers (CHCs) at village level, to cater their needs of farm implements during harvesting and other activities.
- ICAR-IIFSR, Modipuram is advising farmers on the harvesting operations of *rabi* crops and preparation of vermicompost and enriched compost using available wastes for use in the *kharif* crops which will be crucial in the event of short supply of fertilizers due to extended lock down period. Advisories are also given on growing of fodder crops such as fodder sorghum and maize, to have sufficient green fodder for the next 3 to 4 months as availability of wheat residue (Bhusha) may be limited. Farmers are also being advised to use and follow Aarogya Setu app for movement related risks, best practices and advisories related to COVID-19 pandemic.
- ICAR IISS, Bhopal, is advising farmers through social media including WhatsApp, Facebook, institute website, telephone calls other means to provide need based agro advisories. Institute has contacted over 2000 farmers under various dedicated schemes which include; farmers first

project (628), CA Project (400) and MGMG program (1000) in Bhopal and Raisen districts of Madhya Pradesh. The institute is also advising over 500 tribal farmers of Barwani and Betul districts of Madhya Pradesh and Rajnandgaon district of Chhattisgarh.

- ICAR-DWR, Jabalpur is providing advisories related to weed management and other aspects through “weed manager mobile app” and Kisan Mobile Sandesh besides phone calls, WhatsApp, Email, etc. The advisories also relate to timely harvesting of wheat and chickpea preferably, mechanical harvesting through nearby custom hiring centre to avoid shattering losses. Repeated suggestions has been made to stock weed-insect-disease free seeds to be used in next year. Farmers are being to sow short duration varieties (samrat/virat) under conservation agriculture after seed treatment. Advisories have been provided to about 13,500 farmers through Kisan Mobile Sandesh, phone calls, WhatsApp, Email, etc.
- ICAR- IISWC, Dehradun is providing advisories, awareness and safety measures to farmers. They were made aware of present agricultural activities to be undertaken and the disease spread through personal communication (mobile phone) and WhatsApp group (256 farmers).
- ICAR-CCARI, Goa is providing advisory also by phone, WhatsApp etc. to farmers on harassing particularly cashews and rabi crops. The Institute has prepared sanitizers in its laboratory as per the WHO guidelines. About 1800 farmers are benefitted from the advisories given by the institute.
- ICAR-National Institute of Natural Fibre Engineering and Technology, Kolkata has launched an agro-advisory services for farmers on crop specific agro-textile with special reference to mulch in Malda district of West Bengal.
- ICAR Indian Institute of Natural Resins & Gums, Ranchi has created a WhatsApp group "Laksha Updates" to post advisories and get feedback from farmers and NGOs. Lac inoculation has been completed on the advisory on next agronomical practice is being issued.

Livestock and Poultry Farming:

- Social media, including press, WhatsApp, Facebook besides websites of the institutes are being used by the Animal Science research institutes for creating awareness amongst farmers as well as residents & their families regarding prevention of COVID-19. Posters, banners and hoardings have also been installed at prominent places by institutes like ICAR-NDRI, Karnal, IVRI, Izatnagar, CARI, Izatnagar, ICAR-DPR, Hyderabad, ICAR-NIVEDI, Bengaluru and others regarding awareness of COVID 19.
- Total 59 advisories released by institutes covering 1486 farmers, staff, residents and contractual workers. CIRC, Meerut released total 32 advisories benefitting 24223 cattle farmers besides, a severe case of milk fever in cattle was got treated through video call by scientist of ICAR-CIRC, Meerut.
- NRC on Pig prepared advisory for pig farmers for rearing, feeding including health management of pigs during lockdown period and it was made available to the stakeholders through ATARI. Similarly, an advisory was also prepared to create awareness among stakeholders on important pig disease and advisory was sent to the Directors of Veterinary and Animal Husbandry department of all North Eastern States including ADMaC partners. Piglets and pig-feed for 9 months to Tribal people of the state of Assam were also provided. Necessary vaccination and health care were also done for the pigs by conducting health camp before the lock down.

- Dairy, Livestock and Poultry research institutes are creating awareness regarding feeding, breeding and health care of animals as well as processing etc. of milk, eggs and meat through advertisement in daily newspapers and magazines. Awareness is also created regarding consumption of milk, egg and meat as healthy, nutritious diet for immune boosting.
- ICAR-DPR, Hyderabad distributed about 15,000 improved backyard chicken varieties (Vanaraja, Gramapriya and Srinidhi) at subsidised rate to farmers during the lock down period. Also technical advisories were provided to poultry farmers to reduce production cost by following precision feeding schedule.
- ICAR-CIRC, Meerut supplied improved cattle germplasm in the form of frozen semen to the stakeholders by ensuring the guidelines of Government on social distancing.
- ICAR-IVRI, Izatnagar has developed a complete set of advisories to the livestock & poultry farmers as well as for handling & marketing of milk, meat. Egg & other livestock products to prevent transmission & spread of the viral infection through animals & animal produce. These advisories have been disseminated among stakeholders including farming community through Facebook, WhatsApp and are placed in the institute website. The Institute has also started OPD at its Referral Veterinary Polyclinic w.e.f. 20.4.2020 maintaining social distancing.
- Indian Virological Society (IVS) based at IVRI, Izatnagar is active on social media such as Facebook and Twitter. The society is developing an “E-Brochure” under IVS logo with facts on COVID-19/SARS-CoV-2 covering role of the household pets, namely dog and cats or other domestic livestock species and transmission, emerging vaccination approaches, therapeutics, strains/diversity, persistence of infection on various surfaces, etc. and constituting a COVID-19 Expert Committee for providing scientific facts of COVID-19 pandemic, creation of a web page on IVS website about “COVID-19/SARS-CoV-2” and developing research proposals and networking.
- NADRES bulletin (issue 4 April 2020) has been and uploaded in NADRES application at NIVEDI Bengaluru, so as to reach all the stake holders, in which 511 outbreaks were predicted for 13 major livestock diseases and circulated to all state government animal husbandry departments. The AICRP Centres (31) were also communicated with forewarning results for taking preventive measures to avoid the possible disease outbreaks. https://nivedi.res.in/Nadres_v2/.
- ICAR-NRC on Mithun, Medziphema through its WhatsApp group “Mithun Farmers-Arunachal Pradesh, Mizoram, Manipur, and Nagaland” is providing weekly advisories on mithun husbandry in four languages (*English, Hindi, Manipuri, and Mizo*).

Fish Farming:

- The Fisheries Research Institutes under ICAR are continuing to address the problems of fish of such advisories targeting different stakeholder groups (fish farmers of freshwater and coastal aquaculture, hatchery operators/workers, feed plant workers, workers in processing factories, fishermen etc.) have been developed for wide circulation among farmers’/ extension workers and other stakeholders farmers of freshwater and coastal aquaculture, hatchery operators/workers, feed plant workers, workers in processing factories, fishermen, students etc, during the lock down period of COVID-19 pandemic. Updated information on different initiatives taken up by the fisheries research institute on Covid-19 is furnished below

- Fisheries Research Institutes under ICAR have developed and made available Broachers/Posters for providing advisory to different stakeholder groups for cautious action to be taken while undertaking different operations.
- Half a dozen through digital means. These advisories have also been provided to NFDB for wide circulation through digital means.
- In order to provide assistance to industry/stakeholders/consumers, Fisheries research institutes have taken the following initiatives.
 - ICAR-CIFT has initiated production of rapid detection kits for distributing to food safety inspectors/exporters/state Governments etc. as there is shortage of the kits.
 - ICAR-CIFT has made ready the pilot plant facility for active incubates/startup under ABI for helping them to avoid disruption of production.
 - ICAR-CIFRI is interacting with the state fisheries department and providing suggestions/guidelines on various aspects related to fisheries.
 - ICAR-CMFRI have initiated door delivery mechanism of fresh fish ready-to cook cut vegetables to consumers through KVK (Ernakulam) WhatsApp message.
 - ICAR-CIBA were able to produce and supply shrimp feed to local farmers at Kakdwip, West Bengal
 - ICAR-CIBA at Kakdwip Centre, West Bengal and Navsari Centre, Gujarat have taken initiatives to make available fish for those in the neighborhoods of these centres.
 - Freshly harvested fish from the farms were sold through a counter opened near the Centre at Navasari and SHG women working at the farm, provided fish to the village, with the involvement of Research Centre of CIBA
 - ICAR-CIBA is continuing the routine maintenance and up keeping of the broods for the seed production of these species with the help of labourers' from the nearby fishermen villages.

Postharvest Management:

- ICAR Central Institute on Postharvest Engineering and Technology (CIPHET), Ludhiana have provided advisories on the ways to process the raw material by minimally processing, shrink wrap packaging solution to extend shelf life by 1-2 week and also advised farmers to prepare zero energy evaporative storage to store perishables for 2-3 days.
- ICAR-CIFT is providing technical guidance for setting up of Reefer container based fresh fish storage system at Kerala to manage the glut caused by the lock down.
- ICAR-CIFT has made all their laboratories ready for analysing of fish/shellfish samples received from seafood industry for boosting their export.

B. Use of Digital Platform:

All the institutes are sending advisory and attending to the queries raised by the farmers and are supporting them with proper advice through the WhatsApp Groups. And are also releasing the

advisory on their respective websites and social media sites viz., Facebook, Twitter and YouTube. A few specific examples are as given below:

- CISH Lucknow conducted video conferencing with the project partners of ICARFUSICONT. v CPCRI Kasaragod through its WhatsApp group 'Climate change adaptation' and 'EKalpa' mobile application platform delivering advisory services for the crops viz., coconut, arecanut and cocoa.
- ICAR- NRC on Grapes, Pune & IISR, Calicut produced following videos in English & regional languages for the benefit of the grape farmers and uploaded them on You-Tube:
 - (i) <https://youtu.be/AEISzet7InA>
 - (ii) <https://youtu.be/nOfL1XKWIfU>
 - (iii) <https://youtu.be/G943ttdQMgk>.
 - (iv) द्राक्ष बागेतील किड व्यवस्थापन: नवीन व जुनी बाग (Pest management in grapes: new and old vineyards) (<https://www.youtube.com/watch?v=lb6XfM-mU>)
 - (v) नवीन बागेत मालकाडी तयार करणे (Development of fruitful canes after re-cut) (<https://www.youtube.com/watch?v=gC6ThZPfyLE>)
 - (vi) द्राक्ष बागेत खरड छाटनी नंतर उपाययोजना (Vineyard management after back pruning) (<https://www.youtube.com/watch?v=Z2z89EYJklc>)
 - (vii) नाशिक क्षेत्र में अंगूर से बेदाना बनाने की सलाह (<https://www.youtube.com/watch?v=YawPIB8qr-o>)
 - (viii) ದ್ರಾಕ್ಷಿ ತಿನ್ನಿ, ಆರೋಗ್ಯದಿಂದಿರಿ (Eat grapes stay healthy) (<https://www.youtube.com/watch?v=AEISzet7InA&t=3s>)
 - (ix) सध्याच्या परिस्थितिवर द्राक्ष बागेतील उपाय योजना (Management of vineyards under current conditions) (<https://www.youtube.com/watch?v=nOfL1XKWIfU>)
 - (x) द्राक्ष खा आणि तंदुरुस्त रहा (Eat grapes remain healthy) (<https://www.youtube.com/watch?v=G943ttdQMgk&t=17s>)
- The CTCRI Thiruvananthapuram is facilitating marketing of tubers, vegetables and fruits through its online marketing app 'HOMS' (Horticulture Online Marketing System. Efforts are underway to transfer the app to HortiCorp and Vegetable and Fruit Promotion Council under Govt. of Kerala.
- ICAR-CIARI, Port Blair has issued advisories on crops, animals and fisheries through digital media. The advisories were uploaded in face book page of the Institute and sent by WhatsApp to farmers. Besides, the specific technologies and advisories were broadcasted in All India Radio, Port Blair by different scientists to reach maximum farmers in remote places in different Islands.
- IIHR, Bengaluru is using its BESST Entrepreneur Circle for Start-ups and Farmers WhatsApp and is providing solutions. In addition, it is also sharing through Horticulture solutions and E-Horticulture groups
- NRC on Pomegranate, Solapur is sharing the details through its WhatsApp groups namely; Pomegranate Knowledge Group, Rajasthan Pom Growers, Agri Solutions, Farmers Production

Group, Agrowon Solapur Group, Dalimb knowledge Group and Pomegranate International Group

- ICAR-DMAPR and AICRP-MAP&B developed WhatsApp groups and communicated the developments and advisory notes then and there. It used all the digital media like institute website, newspapers, emails, message, mobile phone to communicate with its stallholders.
- NRC Orchids Gantok is using its 'Cymbidium Orchid Growers Group' WhatsApp group for the dissemination of information to Orchid growers.
- ICAR-IIOPR is sending advisory and attending to the queries raised by the farmers and are supporting them with proper advice through social media like WhatsApp Groups, Facebook, and YouTube. The institute has also forwarded the advisories to Annadata and other telugu news channels which have been published through their mobile apps.
- Fisheries research institutes are providing advisory services to fishermen/ extension workers and other stakeholders through WhatsApp, institute websites and other digital means. ICAR-CMFRI is carrying out online advisory in Kerala, Tamil Nadu, Karnataka, Gujarat and Andhra Pradesh to marine fishers and fish farmers on issues related to COVID-19. Thousands of calls and WhatsApp messages have been responded to and doubts clarified. ICAR-CIBA through their mobile app 'shrimpApp' are providing all technical information for the shrimp farmers across India. The queries related to the farming operations and inputs has been answered in 24 hrs time. Further, all important advisories related to the sector, and personal hygiene etc has also been provided through the Shrimp App.

C. Publicizing Govt. decisions:

- Framers have been informed about various exemptions given by the Govt. in farm operations, seed and fertilizer availability, safety in using machines and their movement etc. through MGM contacts and Puss M Krishi App., the personal telephone calls of farmers are being attended and advisories being given. Besides, advisories issued by the Central as well as State Governments regarding precautions to be taken to prevent spread of COVID-19 are uploaded and updated on the ICAR as well as Institute websites all over the country. These include the recent addendum from Ministry of Home Affairs to earlier notification, invoking the Disaster Management Act as per which shops of agricultural machinery, its spares (including supply chain) and repairs and shops for truck repairs on highways, preferably at fuel pumps, can remain open to facilitate transportation of farm produce. Besides, the tea industry, including plantations, can function with a maximum of 50 per cent workers and the government advisory on precautions for harvesting and threshing of rabi crops and post-harvest, storage and marketing of farm produce also says farmers may delay wheat harvesting till April 20 without incurring any significant losses.
- Social media is being appropriately involved by all institutes used for creating awareness amongst residents & their families regarding prevention of COVID-19 and advantages of staying at home and maintaining maximum social distancing. Dissemination of advisory was also made through WhatsApp groups, newspapers, radio and TV channels by KVKs. KVKs and KVK scientists are also disseminating advisories through Facebook. The advisories have been put up in ICAR website and KVK portal where lakhs are registered and downloading the advisories. Each KVK has at least 2 WhatsApp groups for farmers and the advisories have so far been

disseminated to over 5.5 lakh farmers. In addition, KVKs have also sent the advisories to state department and private extension network for faster dissemination for rapid and wider coverage to their group members.

D. Assistance in COVID testing and awareness creation:

- ICAR/NARS has welcomed the decision of the Govt. to allow research institutions under ICAR/IARS to conduct testing of human samples for COVID-19 & co-opt services of the veterinary doctors working in the ICAR Institutes/ Veterinary Universities and field units to work with Medical Doctors to conduct COVID 19 tests & organize other relief operations.
- Key ICAR Animal Health Institutes such as; ICAR-IVRI, Izatnagar, NIHSAD, Bhopal and NRC on equine, Hisar who possess facilities for COVID-19 testing as per WHO/ICMR norms, are engaged in COVID 19 sample testing in humans. Testing of human sample for Covid-19 was initiated from 12.4.20 at NIHAD, Bhopal and NRCE Equine, Hisar and from 17.4.20 at IVRI, Izatnagar. Till date over 2000 samples have been tested at these three institutes.
- NDRI, Karnal and NBAGR, Karnal have provided 3 Real Time PCR machines with expert persons to Government of Haryana Health Mission for strengthening the COVID-19 diagnosis; other institutes are ready to provide real time PCR machines and when needed by the Govt.
- ICAR- IISS, Bhopal provided one RT-PCR Machine to Gandhi Medical College, Bhopal, Government of Madhya Pradesh for COVID-19 testing.
- ICAR-DPR, Hyderabad is also equipped and ready to conduct testing of Covid-19 human samples. Telangana State Govt. will supply RNA samples after isolation and real time PCR analysis will be done at DPR, Hyderabad.
- NRC on Pig provided RNA extraction kit to Guwahati Medical College.
NRC on Mithun imparted hands on training for Real Time PCR for COVID19 to Health Team of CHISR, Dimapur led by Dr Nito Yepthomi. Dr. H. Lalzampaia and Dr. Sosang Longkumer of NRC on Mithun Co-ordinated the training.
- At Indian Agricultural Research Institute, (IARI), New Delhi, a Corona Monitoring and Prevention Cell was constituted including the Medical Officer of the dispensary which is regularly monitoring the situation and giving advisories. A digital display of preventive measures for Corona, initiative of the Hon'ble AM for facilitating farmers for agricultural operations pertaining to Rabi crops harvesting and Kharif sowing, messages of DG, ICAR and Secretary, DARE to farmers about precautions to be taken in agricultural operations have been made at main entrance of the institute.
- As per the request from the State Government, facilities available at the ICAR-IISR Kozikode were provided to the Government Medical College, Kozhikode for Covid19 testing.
- Maharashtra Fisheries and Animal Science University, MAFSU, Nagpur has started COVID-19 testing in its Veterinary College premises.
- The Govt. of Telangana, in exercise of the powers conferred under Section 2 of the Epidemic Act 1897, read with Disaster Management Act 2005 is already availing the services of 20 Veterinary Doctors who are involved in combating the COVID-19. Govt. of UT of Jammu &

Kashmir is also utilizing the services of the veterinary scientists to work together with the medical doctors to facilitate corona testing.

- The ICAR-CIARI, Port Blair extended support to the ICMR-RMRC, Port Blair (The nodal agency for COVID 19 testing) by providing the laboratory facilities and equipment such as refrigerated centrifuge, autoclave, micropipettes, fast centrifuge, consumables plastic wares etc. This is as per the request received from the State Disaster Management Unit, A & N Administration. The institute extended support to the farmers in distress by transporting the vegetables from the farmer's field and sale to the residents of the institute in a win-win situation.

E. Facilitating Govt. efforts:

- IIHR, Bengaluru provided 20 fruit and vegetable vending van to Karnataka Department of Horticulture which are given to FPOs in 10 districts. Van is also given to HOPCOMS, Mysore to sell the fruits and vegetables to the door step of consumers during lock down. These are currently used in Tumkur, Koppal, Bidar, Gadag and Vijayapura districts. Even other states like Haryana and Kerala also have taken the vans to supply fresh fruits and vegetables to consumers' door step to help the people during the lockdown period.
- ICAR National Institute for Plant Biotechnology (NIPB), New Delhi besides informing and advising farmers in the adopted villages by phone and WhatsApp about various advisories issued by the government from time to time has conducted comparative analysis of more than 400 Coronavirus sequences in NCBI and traced its origin from bats to human in China based on sequence phylogeny (manuscript under preparation).
- Request received from different organizations and farmers for the supplying forage crops seeds and root slips are being processed for supply immediately after lockdown period is over. In the meanwhile, to ensure fodder supply during summer, seeds of Forage Sorghum and root slips of Bajra X Napier were supplied to over 4 450 farmers under different projects to the farmers of Jhansi, Jaluan and Lalitpur
- The IIHR Bengaluru gave the technology for processing the watermelon into RTS beverage to Mr. Chetan Dabke who represents Govt of Karnataka FPO in Bidar to rescue the 200 acres of watermelon is ready for harvest. Advised floriculture farmers to dry the petals of different flowers to make natural colours.
- IIHR Bengaluru distributed 80000 seedlings of chilli, tomato and muskmelon under SCSP to Chamarajnagar and Mandya districts of Karnataka. Helped SC and ST farmers in marketing of tomato and capsicum in Mysore, Mandya and Ramanagar districts of Karnataka. Intend to extend support to Sammunati FPOs on processing facility. The Fruits and Vegetable Vending Vans of IIHR are helping the farmers and cooperatives to sell the produce to the local communities and apartments during the lockdown.
- ICAR- IISR Kozhikode distributed black pepper cuttings at Mananthavady, Wynad district, Kerala, two tonnes of turmeric seed materials among farmers at Kozhikode, Mananthavaday and Thalassery regions of Kerala.
- NRC Grapes advised approximately 600 grape growers over phone and WhatsApp, on different aspects of viticulture like cultural practices, water and nutrient management, disease and insect

pest management and post-harvest management. Besides joining hands with NGOs like rotary club to help the poor of nearby localities by distributing food essentials.

- ICAR-CMFRI, Cochin provided 2 Real Time PCR machines to Govt of Kerala Health Mission for strengthening the COVID-19 diagnosis. (i) Govt Medical College, Trichur & (ii) RGCB, Trivandrum.
- ICAR-CIFT, Cochi has provided 1 Real time PCR machine to State Public Health Laboratory, Trivandrum; and 1 Refrigerator 45 l to National Institute of Virology, Alappuzha.
- In view of the shortage of hand sanitisers in the market, some ICAR Institutes have prepared hand sanitiser formulations as per WHO specifications for use of the respective institute staff as well as the local community.
- ICAR-CICR, Nagpur has provided consumables such as hand gloves, tips, Pipettes, sanitizers, tissue papers and lab chemicals to set up testing facility at newly installed testing facility for Corona at AIIMS, Nagpur.
- The Director, NRC on Mithun has been nominated as member of the committee for setting a BSL facility in the state by Nagaland Govt. In the meantime, health scientists of the institute are imparting training to health workers on GLP and Real-time PCR machine.
- The ICAR-CPCRI Kasaragod provided two RT-PCR machines to set up testing facility. The institute also prepared and supplied 120 litre hand sanitizer (glycerine based) to the testing lab, provided guest house facilities at Kasaragod for the stay of state level monitoring officials.
- A seaweed-based hand sanitizer has been developed by ICAR as a preventive hygienic measure to control the spread of the corona viral infection affecting the people massively all over the world. The formulation of the developed product includes isopropyl alcohol (above 60%) possessing antimicrobial activities, seaweed extract from red algae constituting chemical components with pronounced antiviral properties. The seaweed component is also used as an emulsifying agent. Aloe Vera gel is used as a moisturising agent.
- ICAR-IVRI, Izatnagar developed a foot-operated hand washing machine. It is an innovative, cost effective, easy-to-operate in-house fabricated device and can be linked to any water connection easily. The left foot paddle can precisely dispense the desired amount of soap without touching the soap cake or knob of the soap dispensing bottle while right foot paddle precisely regulates the flow of water for washing of hands.

F. Online Education:

- The Education Division issued an advisory to all Vice-chancellors of Agricultural Universities to request their faculty for taking classes through online mode. Most of the Universities are already taking classes through various online mechanisms available to them.
- As a pre-emptive measure for the safety of the students, most of the Universities have asked the students to vacate the hostels during the second to third week of March 2020.
- ICAR-IVRI and NDRI Faculty is already taking classes Online – not only for IVRI students but also for students of other colleges and universities like Tirupati Veterinary University wherein

there were 220 students in one teaching session - using Microsoft Team, Google Teach, Zoom, and other platforms.

- ICAR-CIFE has initiated online classes for the students by using Zoom.
- ICAR-CMFRI and KVK-CMFRI have provided online classes on 'how to produce fish, meat and egg in your home'.
- In view of the hardships faced by the parents and the students due to COVID-19 epidemic, it was decided to extend/revise the dates of submission of Online Application Forms for ICAR's AIEEA from 31 March to 30 April 2020.
- About 15 online training programs on skill developments organized by various Agricultural Universities under ICAR-NAHEP.

G. Serving poor/needy people of society:

- All the ICAR Research Institutes and the Agricultural Universities are assisting respective District Administration in making available and distributing the food for the needy persons on daily basis. Directors and Staff members of different institutes are serving the poor people by providing food to poor and needy peoples in the vicinity their institute, on their own or through NGOs. Ladies Club, IJSCs, staff members at different institutes are contributing house-made Food packets since the lockdown day-1, rations (including wheat flour, rice, pulses, vegetables, cooking oil, spices, salt, etc.), fruits, sanitizers, and home-made cloth masks in close coordination with the district/local administration/police.
- CSAUAT, Kanpur donated 40 Quintal of wheat to Dist. Administration of Kanpur.
- ICAR- IARI, New Delhi is providing ration to approximately 200 construction workers abandoned by the contractors of CPWD who were working there. The scientists of the institute contributed (Rs. One lakh) for this purpose and a committee constitute for this purpose is facilitating this activity.
- ICAR- IGFR, Jhansi through the residents of its campus in Jhansi has supplied food to about 500 migrant labourers which passed through institute gate after lockdown.
- ICAR –IIAB, Ranchi also provided 150 piglets and 500 ducklings to farmers just before lockdown. Apprehending possible difficulties, all animals and birds were vaccinated and feed (one month for piglets and two months for ducklings) were provided.
- Staff members of ICAR-NBAIM, Mau are engaged in cooking food hygienically and distributing it to poor community of nearby villages: Kushmaur, Kahinaur, Harpur and Pipridih benefiting over 250 people every day.
- ICAR- Indian Institute of Millet Research (IIMR), Hyderabad is supporting COVID warriors- Civic workers, police and Medical practitioners with Healthy EATRITE Millet products.
- State Govt. of MP is being provided by ICAR CIAE, Bhopal, the tractor operated aero-blast sprayers and manual knapsack sprayers for spraying of sanitizer in city.
- The ICAR-CPCRI Kasaragod provided one vehicle to Corona Control Room - Alappuzha besides providing 300 coconuts for the community kitchen at Alappuzha and Groceries to the

resident staff through the Cooperative Society. The CPCRI recreation club members prepared daily wearing masks for staffs & families.

- IIHR crated hygiene awareness in the nearby villages and supported Huruli chikkanahalli Gram Panchayath (Bengaluru Rural) in spraying the disinfectant solution in nine villages.
- The ICAR-CTCRI, Thiruvananthapuram has supplied 290 kg cassava tubers, 20kg of elephant foot yam tubers, 10 kg yam tubers to 'Community Kitchens' run by eight group of beneficiaries.
- Accommodation and daily food requirements after exercising isolation & other precautions of around 100 contractual labourers involved in essential services at the institute is being provided by ICAR-NDRI, Karnal since the beginning of the lockdown period.
- The IVRI/CARI Officers' Ladies Club Members, IJSC, individual IVRI/CARI staff members have been contributing house-made Food packets (approx 200 packets everyday) since the lockdown day-1, rations (including wheat flour, rice, pulses, vegetables, cooking oil, spices, salt, etc), fruits, sanitizers, and home-made cloth masks.
- NRC on Mithun provided food and eatables (like packet of 5kg rice, potato, 2 kg dal 1 kg mustard oil soap, 200g channa, 100 g nutrela) to poor and needy peoples in the vicinity their institute, on their own or through NGOs. Staff have also contributed on their own apart from one-day salary.
- Officer, Staff and staff family members and Ladies club of all institutes are serving poor and needy people by providing homemade cooked food and/or food and other general utility items. A total of 35,366 people have been supported so far

H. Facilitating the Govt. efforts to meet the quarantine Requirements:

- Guest houses of various ICAR Institutes located all over the country can also be provided to meet the quarantine requirements.
- ICAR-NAARM, Hyderabad provided 200 beds for the quarantine to Government of Telangana, much before the lock down was announced by Central Government.
- ICAR- Indian Veterinary Research Institute (IVRI), Izatnagar has provided its LBS- International guest house (IGH) for quarantine facility since 2.4.20.
- ICAR- Indian Institute of Oilseeds Research, Hyderabad has created Isolation facility needed for persons under quarantine in the Institute Guest House/Hostel and made available for the Telangana Government
- Quarantine facility of capacity around 80 beds in guesthouse created at Ludhiana campus of ICAR- CIPHET. Fazilka district medical team visiting ICAR- CIPHET were extended laboratory and guest house facilities for preparation of sanitizers and quarantine purpose.
- ICAR-National Institute of Natural Fibre Engineering and Technology, Kolkata has offered Farmers guest house to set up secure quarantine facilities to combat COVID-19
- Eleven rooms of ICAR-CIRCOT, Mumbai have been assigned to state Govt. Police department.
- ICAR CIRC, Nagpur has kept ready its farmers training hostel with 10 rooms (20 beds capacity) accommodation for Corona purpose. ICAR-CMFRI consented to provide CMFRI Canteen space

& utensils to Kerala Government to temporarily create a '*Community Kitchen*' till 14 April 2020 or till the end of lockdown period.

- The Agricultural Universities got their hostels vacated from about 50,000 students in UG/PG/Ph.D.

I. Impact Assessment of COVID 19 on agriculture sector:

- ICAR is assessing the impact of Covid-19 lockdown on agriculture and allied sectors for taking measures to minimise its effect on the country's food security. Towards this objective, ICAR is preparing documents on the possible impact on agriculture and allied sectors and measures to minimise the negatives so that the food system remains unaffected. While the government has exempted many agricultural operations from harvesting to movement of produce to mandis from lockdown rules, the ICAR study will help the government take further action. To help the farmers to battle this crisis, ICAR is continuously issuing crop-specific advisories to farmers, asking them to take general precautions and safety measures during harvesting, post-harvest operations, storage and marketing of rabi crops.

J. Organising Video conferences with the Directors of ICAR Institutes and Vice-Chancellors of Agricultural Universities to address Corona Pandemic:

- i) Two meetings of Directors of ICAR institutes and ATARIs were held under the Chairmanship of Secretary, DARE and DG, ICAR through Video Conferencing (VC). All the 114 Directors of ICAR institutes and ATARIs besides, Secretary, ICAR, Financial Advisor DARE/ICAR, DDGs, ADG and senior officers from the ICAR Headquarters attended the meeting from their respective locations. First one was held on March 19, 2020 before the lockup decision, wherein all Directors and senior officers from SMDs were asked to provide all possible assistance/ advisories to farmers and government in this critical situation of COVID-19 which should help not only sustain their farm activities but also to take care of their health and welfare. Second meeting through Video Conferencing was held on 10th April, 2020 wherein it was emphasized to strictly follow lockdown guidelines, maintain hygiene, use of mask and social distancing in any circumstances.
- Efforts of ICAR institutes being used for testing samples of COVID-19, ICAR-NIHSAD Bhopal, ICAR-IVRI Izatnagar and ICAR-NRC Equine Hisar, were appreciated for volunteering to take up this national duty. Institutes were promised all possible assistance to them to contribute and to ensure strict precautionary measures for the safety of the involved scientists and staff.
 - Innovative technologies/kits/materials for mitigation of risk of infection, developed by different ICAR institutes such as the sanitization tunnel developed by CAZRI, Jodhpur, IARI, New Delhi, CAFRI, Jhansi and hand free hand-wash system developed by VPKAS, Almora which are relevant in today's context, need to be disseminated widely after due testing and approval of competent authority.
 - Contribution of the Institutes through sharing the guest houses for quarantine and for use by police/other staff working to contain this disease in different states was put on record and appreciated. It was decided we may continue to support Local, State and Central governments to fight against the dreaded disease. They were urged to exercise adequate precautions in this regard.

- Crucial role played by ATARI Directors and KVKs under the guidance of DDG (Ag. Ext.), towards dissemination of various all India advisories issued for the farmers, which included the exemptions related to agriculture and allied sectors granted by the central government, and specific agricultural operations was highly appreciated. These agro-advisories are to be continued more vigorously during this lockdown period and beyond so that farmers are supported adequately during harvesting, post-harvest operations and subsequent cropping/farming operations.
 - The impact analysis of the COVID-19 on agriculture is being undertaken by the Council with respect to the impact of the pandemic on various sectors in agriculture and the plan of action to mitigate the negative impacts during and after it. Directors were asked to contribute to this through their respective SMDs.
 - It was decided to revisit and strengthen disease surveillance programs in animals including the pets and wild. It is required to prepare a detailed note on strengthening surveillance of zoonotic diseases, development of infrastructure for rapid diagnosis of foodborne viruses, emergency preparedness for management of such disasters and automation of food processing operations to minimize food handling with the strategies to combat the COVID-19 like situation in future.
 - There is a need to create a bank of Breeder Seed in order to mitigate emergency situations and address the mismatch between indent and production. DDG (CS) will prepare a note on this aspect for further analysis and appropriate decision.
 - In the context of COVID 19, it was felt necessary to understand evolution of plant pathogens including viruses along with host resistance as well as host-pathogen interaction so that the country remains prepared adequately to avoid epiphytotic situations in future. Use of plant genetic resources to identify resistance genes especially for viral diseases should be one of the priority areas of research.
 - All Directors were asked to remain prepared and develop contingency plans and strategies for working, in case the Govt. decides to continue the lockdown.
 - It was decided to develop & use ICT tools by developing FAQs as a measure of quick response to the farmers for their increased use particularly during difficult times.
 - Emphasis was given on providing quick technology solutions to the agriculture related problems being faced by farmers during COVID19.
- ii) The ICAR organized a virtual Vice Chancellors conference on 10th April 2020 which was attended by 70 Vice-chancellors representing State, Deemed and Central Agricultural Universities, and several senior officers of ICAR. Dr.T. Mohapatra, Secretary (DARE) & Director General (ICAR) assessed the situation of various measures being taken by Agricultural Universities during the Covid-19 crisis and urged all the Universities to use technology and provide support to farmers in order to address their problems.

K. Contribution to the PM CARES& State Govt. Relief Funds:

- DARE/ICAR family has contributed about 6.06 crores in the PM CARES. Agril. Universities have also been asked to donate at least one-day salary to either PM CARES and/or respective state Government funds created for the purpose.

- The IVRI Officers Ladies Club has contributed Rs 25,000/- to PM CARES Fund and Rs 25, 000/- to CM Relief Fund, Govt. of UP.
- ICAR CSSRI staff also donated three lakh rupees to Haryana CM Corona Relief Fund by the institute staff.
- ICAR-CARI, Izatnagar Officers Ladies Club donated Rs 30,000/- in PM Relief Fund.
- ICAR-NDRI, Karnal donated Rs 11.00 lakhs to PM Relief funds from Labour welfare funds, Rs 31,000/- from Ladies club to CM Relief funds.
- Scientists, staff and their facilities working under various ICAR institutes have also additionally contributed to the PM Cares or state operated relief funds besides centrally contributing 1-day salary.
