

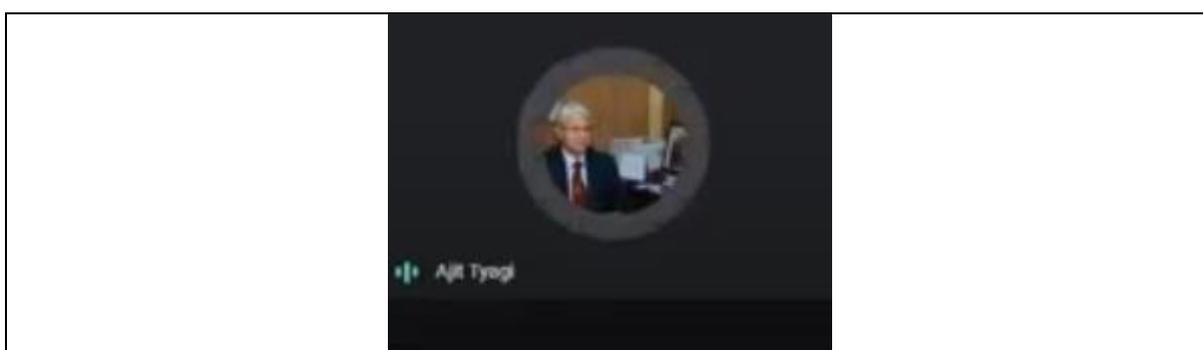
***Draft***  
***Proceedings of the of meeting of***  
***Core Group IV for steering***  
***activities South Asia Forum on***  
***Agricultural Meteorology***

Under the Theme:  
Web Portal for South ASIA FORUM ON  
AGRICULTURAL METEOROLOGY

**Date: 6<sup>th</sup> March 2021**  
**Time: 1600 Hrs IST to 1900 Hrs IST**  
**Venue: Virtual Platform (The Google meet)**

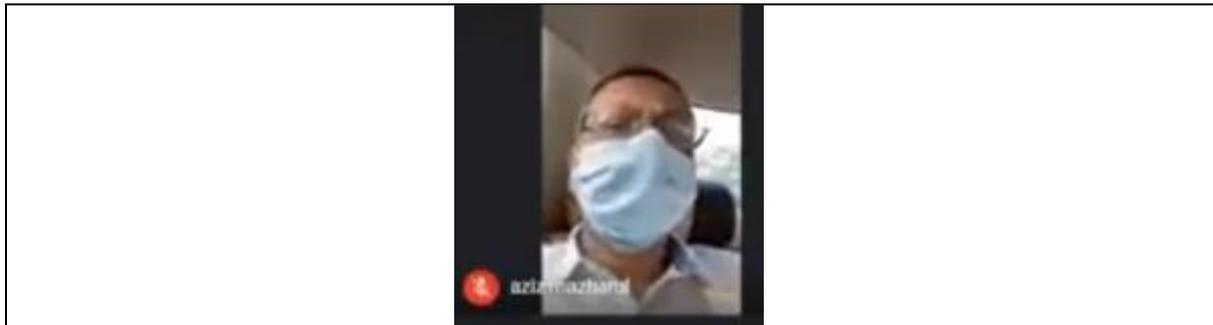


The meeting was started by welcoming all the members of the Core Group IV (list of the members is available in Annexure I) for steering activities of South Asia Forum on Agricultural Meteorology (SAFOAM) under the theme “Web Portal for South Asia Forum on Agricultural Meteorology”. At the outset, quick round of introduction of the members was made. **Dr. N. Chattopadhyay** said that he was really thankful to all the member of Core Group IV for participating in today’s meeting and whole heartedly supported the formation and on-going activities of SAFOAM. He mentioned that the present theme was very important as the Web Portal for SAFOAM would have the reflection of different kinds of activities carried out for South Asia along with the progress of work and the level of cooperation among the member countries in South Asia. He added that it was sure that under the presence of all the honourable advisors and all other esteem members today’s meeting would be highly productive and useful. Afterwards, Dr. Chattopadhyay started moderation of the meeting by requesting all the advisors and members of this group to present their views/comment/suggestions on how to go ahead on designing the website of SAFOAM looking at the various contents, its sustainability and completeness etc.

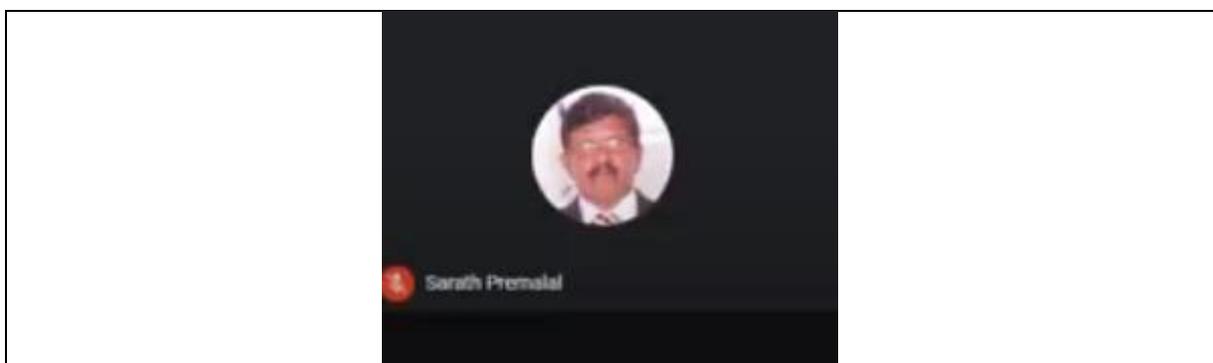


**Prof. Ajit Tyagi**, Former Director General of Meteorology, India Meteorological Department & Member, W.M.O. Executive Council said that according to him this platform for societal aspects would be the most effective. This initiative for creation of website for SAFOAM is highly welcome. According to him whatever the strong points in agromet advisory services of India and Bangladesh are generated that might be pulled together for the benefit of other countries in South Asia. An effective website is a primary vehicle for success of any initiative in real time. He continued by saying that during the present pandemic situation when physical contacts among the diverse background personalities in

the South Asian countries might not be possible, the SAFOAM website would be a good beginning as this would provide the current update of all the issues related to operational agromet advisory services. He was mentioning two important aspects of any impressive & interesting website; these are good website design and updating of the website with current and important and relevant issues which are itself challenging. He advised for developing the support mechanism which would ultimately make the website sustainable and get recognition from all. He said that he was sure that with the wide spread agromet experts in India and the remaining South Asian Region (SAR) all the activities of SAFOAM including the preparation and maintenance of website would be a great success. He assured that, as per the need, South Asia Meteorological Association (SAMA) would support SAFOAM activities in future.



**Dr. Mazharul Aziz**, Chief Instructor, Agriculture Training Institute, Department of Agricultural Extension (DAE), Former Project Director, Component-C of Bangladesh Weather and Climate Services Regional Project of the World Bank, briefly mentioned about the Bangladesh Agromet Advisory Service System. He said that Agromet Advisory Services bulletins (district, national levels), are prepared in collaboration with Bangladesh Meteorological Department (BMD), & Bangladesh Water Development Board (BWDB). He said that as per the weather act of Bangladesh, for issuing any weather alert, advisories and special bulletins, permission from the Bangladesh Meteorological Department BMD is required. He wanted to know what would be the mechanism if the same would be issued under SAFOAM. He continued whether SAFOAM would seek permission from BMD in issuing the same as mentioned. **Dr. L.S. Rathore**, Former Director General of Meteorology, India Meteorological Department, International Consultant, The World Bank said that he would react to **Dr. Mazhar's** query shortly.



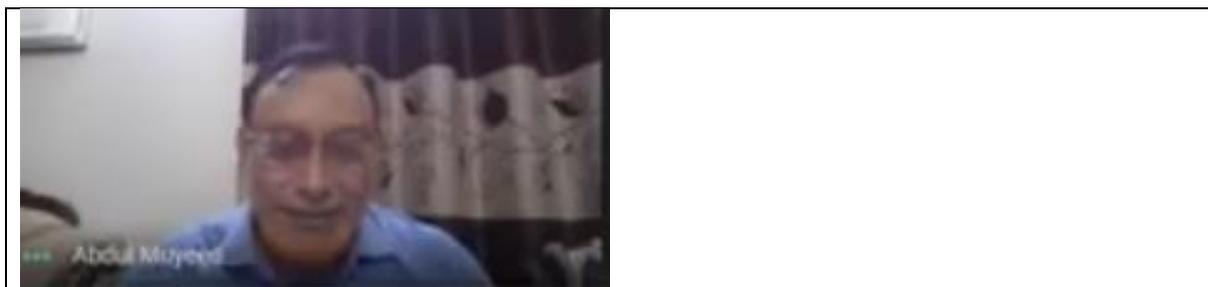
**Mr. KHMS Premalal**, Former Director General of Meteorology, Sri Lanka said that although there are number of websites on agriculture and other sectors in number countries and all over the world but

there are no dedicated website only targeting agricultural meteorology. According to him, the concept of agromet portal should focus the agricultural community and upload relevant agriculture and other meteorological information. He was referring his active involvement in World Food Programme on last mile services through development and maintenance of agromet portal in Sri Lanka where the national bulletins at agroecological zone are uploaded. He said that at present there is no provision for uploading local bulletins. It would be good idea to upload the local bulletins in agromet portal of SAFOAM. He said whether it is possible to prepare and upload composite maps for different remote sensing indicators like NDVI, VCI etc in the agromet portal which ultimately would help in providing compensation to the farmers during disaster situations like drought and floods under the climate change and climatic variability. He said that these composite maps, as mentioned, would also assist in the implementation of index-based insurance/ agricultural insurance in Sri Lanka

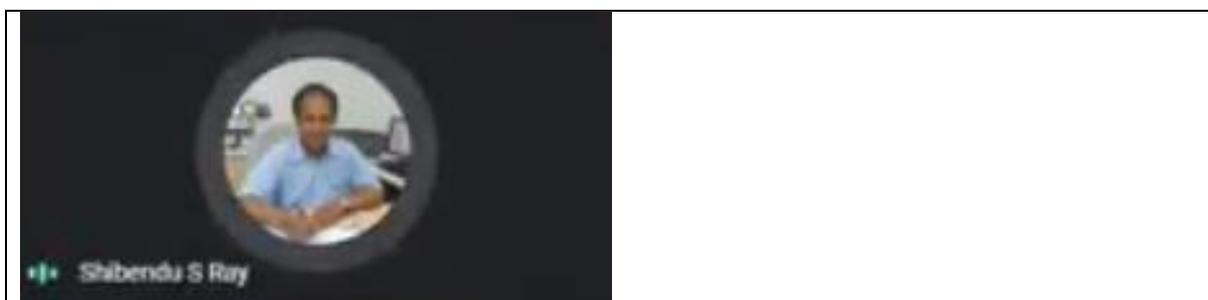


At outset **Dr. L.S. Rathore**, said that he was happy to see the work so far has been done from the launching of the forum. He said that overall structure of SAFOAM was being built up concurrently by building different components of the forum and as a result different groups were formed and working. Though the different Core Groups, formed after the launching of SAFOAM, were not working on together, still the all the Core Groups were working with full enthusiasm and are interlinked with each other and cross flow of the information was also happening among the Core Groups. This Core Group was mandated to develop the web portal which would be the face of the organisation. He really appreciated the work that has been done so far on the website particularly what could be the possible lay out, what could be the static and dynamic information and now there was need to deliberate on this particularly on the possible lay out of the website in terms of static, dynamic information, possible flow of information etc. and how to sustain as **Prof Tyagi** already mentioned. He said that first and foremost we should clear in mind the prime objectives of the forum when developing the website. Under this forum no replication of work, competition, repetition work done by the respective countries in SAR would be taken up; on the contrary the forum would capacitate the fellow agrometeorologists which are serving the different countries to facilitate by providing products that would keep us alive with the new information in regional basis and these products are nowhere available. The novelty of the SAFOAM website would be to display the new products & information, like composite NDVI, VCI maps which are found any of the website in the world. He said that the face of the SAFOAM would be the website of SAFOAM. He pointed out though there is scope to include amount of information about SAFOAM like science of agrometeorology, organogram etc under static information, the most interesting and challenging would be the dynamic information. The most important recipe would be the products as shown by Nabansu; however, we need to deliberate the new products most important by different countries and regular update of the same. **Dr. Rathore** fully agreed that sustainability of the website of SAFOAM would be great challenge to all of us. He said that we should really see the list of the products which could be included and which countries to be need these under the forum. Replying to the query of **Dr. Mazharul Aziz**, **Dr Rathore** said that all the open-source data and the information already available in public domain by different countries would be given access in our website to other. According to him this is not simple access but we need to prepare

a framework where we put our recipe in the front and supplementary information from other country would be given the link. He said that we have to put your recipe in the front and at the back hand the products and information generated by other country's link could be given under such circumstances and for that no legal permission would be required. According to him definition of SAFOAM zone should be revisited. He suggested that grid concept might be taken while preparing the composite map for any product as this would eliminate the dispute in country boundary. He also suggested that boundary of SAFOAM might be extended more on the southern side which would cover the south Indian ocean so that it would be possible to display meteorological information, satellite imagery, cloud imagery, SOI etc. over the adjacent ocean. He also guided on the registration of the domain and domain name issues of the SAFOAM website. At the end he complemented all the members of different Core Groups for their good work on SAFOAM initiatives.



During the launching programme of SAFOAM, **Dr. Abdul Muyeed**, Sectorial Consultant, Care Project, RIMES, World Bank & Former Director General, Department of Agricultural Extension, Bangladesh suggested to develop the website of SAFOAM. He said that so far, he heard from the members in today's meeting and also observing the draft website of SAFOAM, he was feeling very much enthusiastic. He said that the website of SAFOAM would have basket of information on agriculture, weather and allied sectors and all the countries of the South Asia could harvest and accommodate the same as per their need. He was confident that the website would take a good shape in future and in fact it would be the hub of the SAFOAM. He also suggested to link SAFOAM with South Asia Information Centre (SAIC) as this would help in registration of the website and developmental activities in future. He congratulated to all involved in developing the SAFOAM website. The website would be very helpful for South Asian countries as they could get access the information to be collected from different leading sources and organisation like NOAA. He was referring the preparation of agromet advisories through automation considering the crop calendar and other weather, crop inputs. Once again, he conveyed his happiness for the advancement in development of the SAFOAM website.



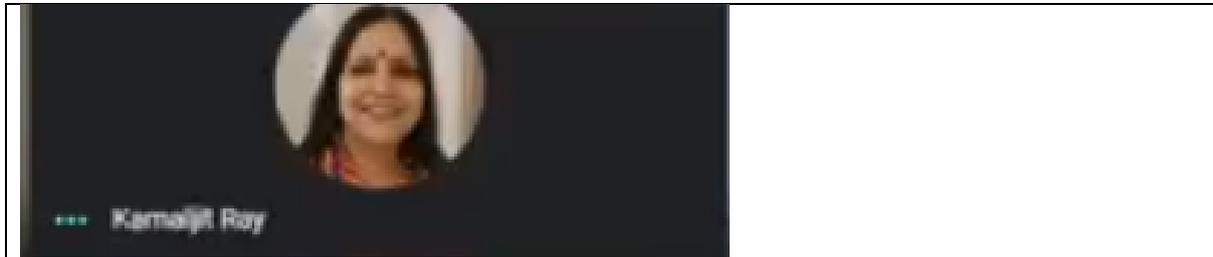
**Dr. Sibendu Roy**, Director, Mahalanobis National Crop Forecast Centre, New Delhi appreciated the initial plan for developing a good portal where number of satellite data/ information/products from

diverse and open sources were used in framing the website of SAFOAM. He also mentioned that in addition to the products like NDVI, VCI, TCI, PET, Insolation, soil moisture information from SMAP could also be included along with MODIS, NOAA, AWIFs data and other data at high resolution scale may also be taken into consideration in developing the website. He also mentioned different activities of Mahalonobis Crop Yield Forecasting Centre like issue of weekly crop weather situation, drought monitoring in India. He was of the same concern as expressed by **Dr. Tyagi** that it was relatively easy to launch website but great challenge would be the continuity in the updating of the information and products. As the weather and satellite images are changing very fast, updating should be done once a weekly or at least once in a fortnight interval. He also said that dedicated team should support this activity He stressed for appropriate mechanism to get the support and recognition from the governments in South Asian countries as Director General of IMD and Director General of Meteorological Departments of other countries in South Asia are also already supporting this initiative. According to him, at least recognition from Ministry of Agriculture, Ministry of Meteorological Department are desirable. Even international organisations like FAO, WB, WMO's recognition would be added advantage. He said that he would consider the forum as inter-governmental forum. Also, link could be given to MODIS, FAO, other organisations, international bodies, organisation, BAMIS portal of Bangladesh. He suggested that SAFOAM could be the member of Group on Earth Observations Global Agricultural Monitoring Initiative (GEOGLAM) which are issuing qualitative information of monthly crop condition through crop monitor website like exceptional bad, good and other categories. He was also the same opinion that country geographic boundary issue may be avoided, grid concept might be used in the preparation of composite products for SAR. He assured that on behalf of himself and MNCFC all support would be provided for the development of SAFOAM website in particular and also overall SAFOAM activities and also share the relevant information during the development stage of website.

**Dr. Rathore** said that we are all encouraged by **Dr. Ray's** deliberation. He said that definitely linkages would be established with Governmental organisations and international organisations but initially it is better to set up ourselves and establish a good footing of SAFOAM. **Dr. Rathore** wanted to know that beyond the boundary of SAR and beyond the climate and weather, FAO is generating different products and information for monitoring of pests like locust coming from Africa. As far as the SAFOAM is concerned how we get some information under such situation to issue some guidelines/products/information to take control measure against locust.

**Dr Ray** said this is very much pertinent question. **Dr. Ray** was referring the considerable incidence of locust in India and neighbouring countries during last two years especially during winter season. As far as the control measures of locust incidences in India are concerned, **Dr. Ray** informed that Remote Sensing Centre at Jodhpur, Rajasthan is the nodal organisation looking after the issue. He said that information on four parameters namely air temperature, soil moisture, vegetation condition and wind speed and velocity are used to take up control measure against locust. According to **Dr. Ray**, these above-mentioned data/information are globally available and may be used in other countries in SAR also. He stressed for generation of some fund as a dedicated team would be given such work for SAR. In addition to that, **Rd. Ray** said that these days residue burning after the harvest of the crop are creating big issue on health hazards. Utilising different parameters like thermal condition, it is now possible to provide qualitative information of residue burning in a particular area. Secondly, **Dr. Rathore** wanted to know from **Dr. Ray** how the drought monitoring system, like India could be implemented in different countries in SAR. **Dr. Ray** informed that in India drought manual has been developed for monitoring of drought in generic form. Taking the important aspects of the manual and other information of the respective country, drought monitoring in different countries in SAR is possible. He also mentioned about the work done by the International Water Management Institute,

Sri Lanka which are doing good work in this regard and IWMI may be taken in board in drought monitoring in South Asia. **Dr. Rathore** informed that **Dr. Giriraj Amarnath** from IWMI is also the Founding of SAFOAM and we would be in touch with him in future in this regard.



**Dr. Kamaljit Ray**, Advisor & Sc-'G', Ministry of Earth sciences, New Delhi said that this was a great idea & initiative and looking to be the part of the activities of the forum. She suggested that the proposed activities could be done alongside with the Governmental machinery. According to her, involvement of Government would further strengthen the forum. She added that all necessary supports from her end would be provided and any support from the Government is required, she would try her best to do this.



**Mr. Vijay Deshpande**, Scientist F, National Informatic Centre, Pune, Maharashtra introduced himself as statistician and also inform his experience in website development & IT solutions of various Government Organisations in the country. He said that prior to joining this meeting, he has prepared some points in regards to development of website of SAFOAM and he would like to share the same. According to him, there are two phases in the development of website. These are (i) design and development of website, (ii) Sustainability of the website to make the website long lasting and makes complete website. He has mentioned following points need to be considered during the phase one of the development of the website.

1. It should be easy to use
2. It should contain the latest contents related the theme of the website
3. Good relation with the customer, who used the website, should be maintained
4. Website should be mobile enabled.
5. As multi-country will be involved in the website operation, accessibility guidelines and multi-languages support system should exist
6. Open-source technology should be used as there would be no hurdles and easy to use and cost effective.

7. While preparing the website, certain data base standard needs to be followed otherwise it may not be possible to prepare any reports
8. It should be developed based on Content Management System (CMS) and have CMS rule, CMS access, roll back access etc.
9. Regular audit should be done to avoid any unwanted problem in the website.
10. There is need to keep history of the content of the website
11. Website should be free from vulnerability
12. Care should be taken so that there would be non chance of hacking of the website
13. Link should be given to other website to avoid any replication of the content
14. There is need for integration of the server, where the website hosted, with other servers.
15. It is very much essential to provide webservices to other websites. Cited examples of the experience of agromet website of India Meteorological Department with the Agricultural Universities
16. Website can be considered a good way of dissemination of content also
17. There is need to integrate server with email and SMS server.
18. Provision should be made to keep feedback system.
19. Support mechanism should be made for providing answers to the query raised from different sources.
20. Regular web security audit should be done

Mr. Deshpande said that all the above points should be considered at the time of the development of the SAFOAM website. He continued that under the phase two of the development of the website, sustainability aspect of the website should be taken into consideration to give the completeness of the hosting of the website. Following points need to be considered

1. Upgradation of the website should be done at different time intervals.
2. Web security should be done when there are substantial changes are made in the website
3. Monitoring of functional aspects should be done.
4. User maintenance should be made
5. Support mechanism should be established
6. Grievances mechanism of content providers should be addressed
7. Query asked should be resolved
8. Regular maintenance of the website should be done.
9. Though costly affair, efforts may be done to host the website in upgraded platform like Cloud server.
10. Management services of the website should exist.
11. When everything is obsolete, redevelopment of website should be considered

**Dr. Rathore** thanked **Mr. Deshpande** for giving the entire spectrum of the activities and what we required to do. He has underlined the need to institutionalise the entire process of the website. In doing so, we need finance, manpower and other things. In this regard we have an idea in mind to approach world Bank regarding hosting of the website and how to go about it. However, in the meantime whether **Mr. Deshpande** could help us to prepare the proposal including all the aspects he has mentioned. And concurrently we will approach donor agency for supporting this initiative. He has agreed to this proposal. However, he said that he has shared preliminary thoughts but more can be done on automation of different components of the website using artificial intelligence also. He continued that more attention might be paid to enhance the system and the portal.



**Dr. Orivaldo Brunini**, Director, Agricultural Research Support Foundation, Former Professor of Agrometeorology, and Former Senior Researcher on Agrometeorology. Agronomic Institute-IAC, Brazil said that web portal is very important for the extension service persons for taking farming decision on daily basis. He has given a presentation and nicely explained how the SAFOAM website would look like. He mentioned elaborately an agrometeorological WEB PORTAL assistance program which must have the following basic missions:

- ▶ A - increase the yield in food and fiber production
- ▶ B - reduce production costs
- ▶ C - reduce losses due to the effects of adverse weather and climate conditions
- ▶ D - minimize soil, water and air pollution caused by agricultural operations

E - minimize energy expenditure in agricultural operations

He has also mentioned that it should contain overall general information for all countries including specific –for each country with basic and requirements and different users

**Dr. Chattopadhyay** requested the Technical Officers working in the Gramin Krishi Mausam Project, India Meteorological Department to give their comments/suggestions on the design, content and sustainability of the proposed website of SAFOAM.

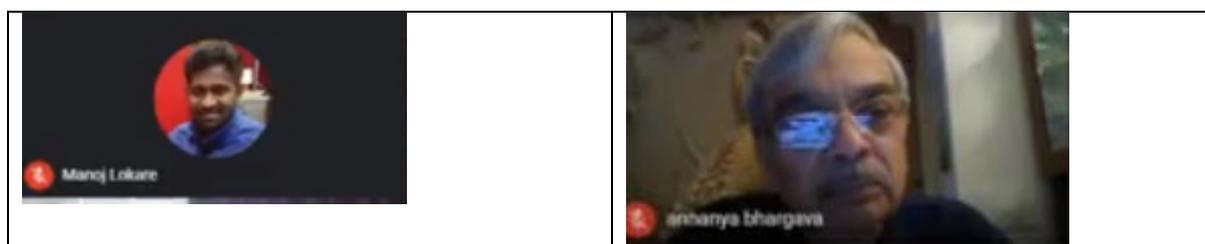


**Dr. Rani Saxena**, Asstt. Professor (Agrometeorology), Rajasthan Agricultural Research Institute (SKNAU, Jobner), Durgapura, Jaipur said that it was an honour for her to be part of the SAFOAM initiatives. She said that she would like to offer her services on the drought & locust assessment in South Asia as mentioned by **Dr. Ray**. She said that she would do her best to make the SAFOAM

initiatives highly successful. She also suggested that all the domain experts of the web portal of SAFOAM in different countries should be given chance to share their views.

**Dr. Mahasweta Bhowmick**, Technical Officer, Gramin Krishi Mausam Sewa. Kalyani Agro-met Field Unit, Bidhan Chandra Krishi Vishwavidyalaya. West Bengal, India informed all the important activities doing for the farming community in West Bengal, India. She also said that her rich experience would help her to associate herself in the multi-purpose activities of SAFOAM and SAFOAM web portal in particular.

**Dr Veena Sharma**, Technical Officer/Assistant Professor, Agromet Section, SKUAST-Jammu, Jammu, J&K said she was thankful for involving her in the SAFOAM activities. According to her, success stories from different countries in South Asia on operational agromet advisory services should be displayed as the same might encourage the fellow agrometeorologists in different countries in SAR. She also suggested that there should be some provision for membership corner should be there as this would help in applying and getting membership subsequently. She also requested to involve her in website development of SAFOAM.



**Mr. Manoj Lokare**, GeoSpatial Researcher, Aberystwyth University, United Kingdom, has developed the draft design of the web portal of SAFOAM presented by **Dr. Chattopadhyay**. **Mr. Manoj** said that he would like to work on the development of the website of SAFOAM under the able guidance of **Mr. Deshpande**. **Mr. A K Bhargava**, Former Assistant Meteorologist, India Meteorological Department, New Delhi has given suggestions on display of important features on agrometeorology in different countries including Sri Lanka through the website of SAFOAM. According to him positive as well as negative feedback information from the user community are equally important and should also be displayed through the website. He also stressed for display of soil testing information that would also help in irrigation advisories.

After the deliberations from the advisors and member, **Dr. Chattopadhyay** requested for open discussion by the advisors and members on the present theme

**Dr. Mayeed** requested to arrange a webinar, after finishing all the Core Group meeting, to present all the proposed important activities of SAFOAM inviting the donor agencies like UNDP, USAID, WMO, WORLD Bank etc and ultimately finalise the road map of SAFOAM supported and funding by the donor agencies as mentioned.

**Dr. Chattopadhyay** elaborated the overall future activities of SAFOAM and also the preparation of the concept paper collectively and its presentation in the proposed workshop inviting all the founding members of the forum for finalisation the same.

**Dr. Mazhar** said that as far the standard of agromet advisory services is concerned, India is in developed stage while Bangladesh, Nepal in developing and other countries in infancy or yet to start the services. Under such circumstance, something should be done to the countries which are in infancy or yet to start the operational agromet advisory services.

**Dr. Rathore** was referring the ideas outlined by **Dr. Mayeed & Dr. Mazhar** for assistance to the countries (Nepal, Bhutan, Sri Lanka, Afghanistan, Myanmar) which are initial stages. Dr, Rathore said that the products/assimilated products to be available in the proposed website would be very helpful. Therefore, it is needed to identify the needs of the countries, which are initial/infancy stage, and how the products mentioned in the web portal would be very helpful and further guidance in launching operational agromet advisory services in these countries

**Mr. Deshpande** was referring the verification of moderated district level weather forecast from the Regional Meteorological Centres/Meteorological Centres for preparation of district agromet advisories under the Gramin Krishi Mausam project in India. He mentioned that similar activities could be done through SAFOAM website on verification of agromet advisories prepared by the different countries in South Asia.

**Dr. Chattopadhyay** said that the SAFOAM might not involve in such operational activities of the member countries; however, the verification of weather forecast methodologies would be shared with the different countries in South Asia.

**Dr. Brinini** said the today' meeting is very important for providing services to the user community of South Asia through the website of SAFOAM. He also said that the weather forecast and agromet advisories to be communicated the farmers would be highly useful on food security issue in South Asia. He mentioned that organisation of workshop/webinar would be very helpful to know and apply new technologies in operational agrometeorology in South Asia. He requested to share the presentation made on the website to all the members of the meeting for providing more feedback in the issue.

**Dr. Kamaljit** said that along with other activities, it is proposed to kick start SAFOAM's activities with organising webinars by inviting the experts all of the world different topics to make it more popular. She added that these experts might be requested to present the different component of operational services, challenges, success stories so that the member countries in South Asia would be benefitted.

**Dr. Rathore** thanked everyone in the meeting for their brilliant comments/suggestions. He said that last couple of weeks we covered a good amount of turf; however, today's suggestions are also very valuable. As a result, this would take us to some different actionable points involvement and for that we need to work on few things. First actionable point is in architectural design of the website and aspects related to sustenance, finance, administration etc. Therefore, we need to bring out more clarity on that and prepare a kind of proposal with prototype website/webpage and share the same in the proposed workshop, as mentioned, in front of some donor agencies/officials to lure them to kinds of opportunity and also, we can offer them in order to sustain the efforts/activities by offering some supports from them. Under action point two, it is reiterated that SAFOAM would never involve itself as a kind operational mechanism replacing/competing with the member countries activities rather complement the efforts and generate produce the products. If not produce, there are some products which can be assimilated to enhance in a form accessible to the user group which could be official in agromet service people, engaged in research & development, intermediaries and even farmers also. The architectural design would be linked to the agromet advisory system in the region and globally would be helpful.

As mentioned earlier we are now at infancy stage and we would have good holding of the establishment of SAFOAM, we would definitely explore for institutional mechanism. We have definite got good suggestion and we will further refine our thoughts that attract funding and ultimate prepare sustainable road map for website of SAFOAM

## **Recommendations of the Meeting**

1. There is need to develop good website design and updating of the website with current and important and relevant issues.
2. It is essential to develop the support mechanism which would ultimately make the website sustainable
3. There should be two phases in the development of website. These are (i) design and development of website, (ii) Sustainability of the website to make the website long lasting and makes complete website.
4. to display the new products & information, like composite NDVI, VCI maps which are not found any of the website in the world.
5. Website should give the access to all the open-source data and already the information available in public domain by different countries
6. Grid concept might be taken while preparing the composite map for any product as this would eliminate the dispute in country boundary.
7. Boundary of SAFOAM might be extended more on the southern side which would cover the south Indian ocean so that it would be possible to display meteorological information, satellite imagery, cloud imagery, SOI etc. over the adjacent ocean.
8. linkages should be established with agromet advisory system in the region and globally and Governmental organisations and international organisations.
9. Efforts should be made to generate of some fund to appoint dedicated team to design and development of the website, generation of products, regular updating and maintenance of the website.
10. Activities under SAFOAM should be done alongside with the Governmental machinery. as, involvement of Government, particularly Ministry of Agriculture & National Meteorological & Hydrological Services would further strengthen the forum.
11. Preparation of proposal for SAFOAM website considering all aspects of architectural design of the website and aspects related to sustenance, finance, administration design, development & sustainability. And concurrently donor agencies (UNDP, USAID, WMO, WORLD Bank etc) may be approached for supporting and sustaining the efforts/activities in this regard.
12. Organisation of webinars by inviting the experts all of the world to make SAFOAM more popular.
13. SAFOAM will not involve itself as a kind operational mechanism replacing/competing with the member countries activities rather capacitate and complement the fellow agrometeorologist which are serving the different countries to facilitate by providing the agrometeorology's products. If not produced there are some products which can be assimilated to enhance in a form accessible to the user group which could be official in agromet service people, engaged in research & development, intermediaries and even farmers also

**Dr. Chattopadhyay** once again thanked all the advisors and all the members for their active participation, sharing their ideas and also patient hearing for an extended time period and also wishing to meet all virtually shortly and periodically  
Meeting was ended at 19.00 hrs with vote of thanks

## ***Annexure I***

### ***List of Members***

#### ***Core Group IV for steering SAFOAM activities***

#### ***Theme : Web Portal for SAFOAM***

### **Leader**

\* Dr. Nabansu. Chattopadhyay

President, International Society for Agricultural Meteorology

Executive Secretary, Global Federation of Agrometeorological Societies (Global FAMS)

Former Deputy Director General & Head & Scientist F, Agricultural Meteorology Division, India  
Meteorological Department

Former Chairman of Open Panels of Commission of Agricultural Meteorology, World Meteorological Organisation, Geneva

Former Senior International Agrometeorological Technical Consultant, Agromet Project, Bangladesh

Former Short Term Consultant: World Bank

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### **Advisors**

**\*1.Dr. L.S. Rathore**

Former Director General of Meteorology

International Consultant, The World Bank

Consultant, United nations Development Programme (UNDP)

Member, Advisory Board, National Disaster Management Authority (GOI)

Member, Research Council CSIR-NISTADS

Member, Appeal Committee, National Agricultural Education

Accreditation Board, ICAR

Vice President, Vigyan Bharti

President, Society for Rural Improvement

**\*2. Air Vice Marshal (Retd) Prof. Ajit Tyagi**

Chairman, IDC Foundation

Senior Adviser, IRADe

Member, WMO Working Group on Tropical Meteorology

Former Director General of Meteorology &

Member, W.M.O. Executive Council

Immediate Past President, Indian Met Society

Patron

India Water Foundation

**\*3. Dr. Orivaldo Brunini**

Director, Agricultural Research Support Foundation, Brazil

Former Professor of Agrometeorology, Faculdade Luiz Meneghel,

And Former Senior Researcher on Agrometeorology .Agronomic Institute-IAC

Brazil

**4. Prof. U.C. Mohanty**

School of Earth Ocean and Climate Sciences

Indian Institute of Technology Bhubaneswar

Argul, Jatni-752050, Odisha, India

**\*5. Dr. Abdul Mueeed**

Dr.Abdul Mueeed

Sectorial Consultant

Care Project,

World Bank

RIMES.

Former Director General

Department of Agricultural Extension (DAE)

Khamarbari, Farmgate, Dhaka, , Bangladesh

**\*6. Dr. Sibendu Roy**

Director

Mahalanobis National Crop Forecast Centre

New Delhi

## **Members**

**\*1. Dr.(Mrs) Kamaljit Ray,**

Sc-'G', Ministry of Earth sciences,, Prithvi Bhavan,, Lodhi Road,, New Delhi

**\*2. Dr. Mazharul Aziz**

Chief Instructor

Agriculture Training Institute

Department of Agricultural Extension (DAE)

Sher-E-Bangla Nagor, Dhaka-1207

Former Project Director, Component-C of BWCSR of The World Bank

Founding Member: South Asia Forum on Agricultural Meteorology (SAFOAM)

Member: Bangladesh Meteorological Society (BMS)

Cell: +8801712119259

**\*3. Mr. KHMS Premalal,**

Former Director General of Meteorology, Sri Lanka

**\*4. Mr. Vijay Deshpande,**

Scientist F

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## ***Photo Gallery***





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