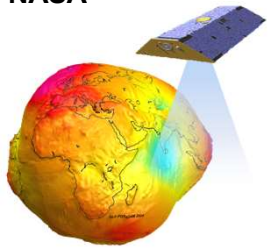


Customized irrigation and climate advisory services through citizen science

Collaborating Partners	Pakistan Council of Research in Water Resources, Islamabad Pakistan University of Washington, Seattle United States
Local and Regional Capacities	The partners have the capacity to execute, troubleshoot, provide necessary trainings to communities and government sector institutions PCRWR: National UW: Regional
Solution Description	<ul style="list-style-type: none"> Partners are executing Irrigation Advisory Services (IAS) since 2016 to date Beneficiary farmer feedback established the need for more compatible climate advisory to avoid production losses in Cotton-Wheat crop production cluster of the nation A community resilience through climate information plan is needed for Indus Delta In response, more weather observatories with human resource is needed to cover this gap <p>Idea: Making citizens “satellites” or “Weather observatories” for the greater benefit of farmers in Pakistan and across the region</p>
Target Communities	<ul style="list-style-type: none"> IAS beneficiary farmers in Southern Punjab region, i.e. Cotton-wheat cultivation zone Indus Delta communities at the frontline from climate change
Solution in hand	A functional Irrigation Advisory Service in 41 districts of Pakistan

The Process of Evolution: IAS to ICAS

GPM, NASA



GNWPM

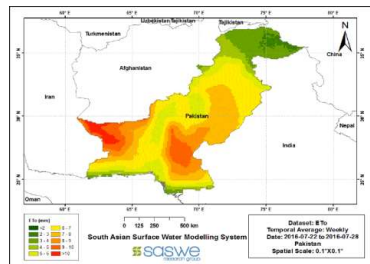
Server at PCRWR



Irrigation Advisory Services (IAS)



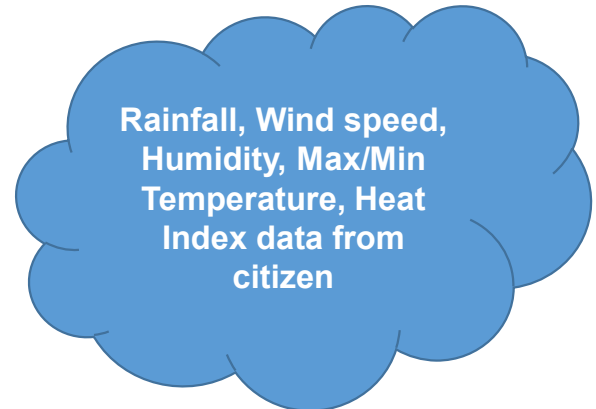
Irrigation and Climate Advisory Service (ICAS)



ET₀ (Evapotranspiration)



Crop coefficient values (Kc) from 04 Lysimeter stations of PCRWR



Rainfall, Wind speed, Humidity, Max/Min Temperature, Heat Index data from citizen

Farmers/community to act as sentinels/weather stations for making the existing IAS more actionable, location specific and accurate

Weather trends/forecast from NASA and PMD

Crop water consumption (ET) of previous months

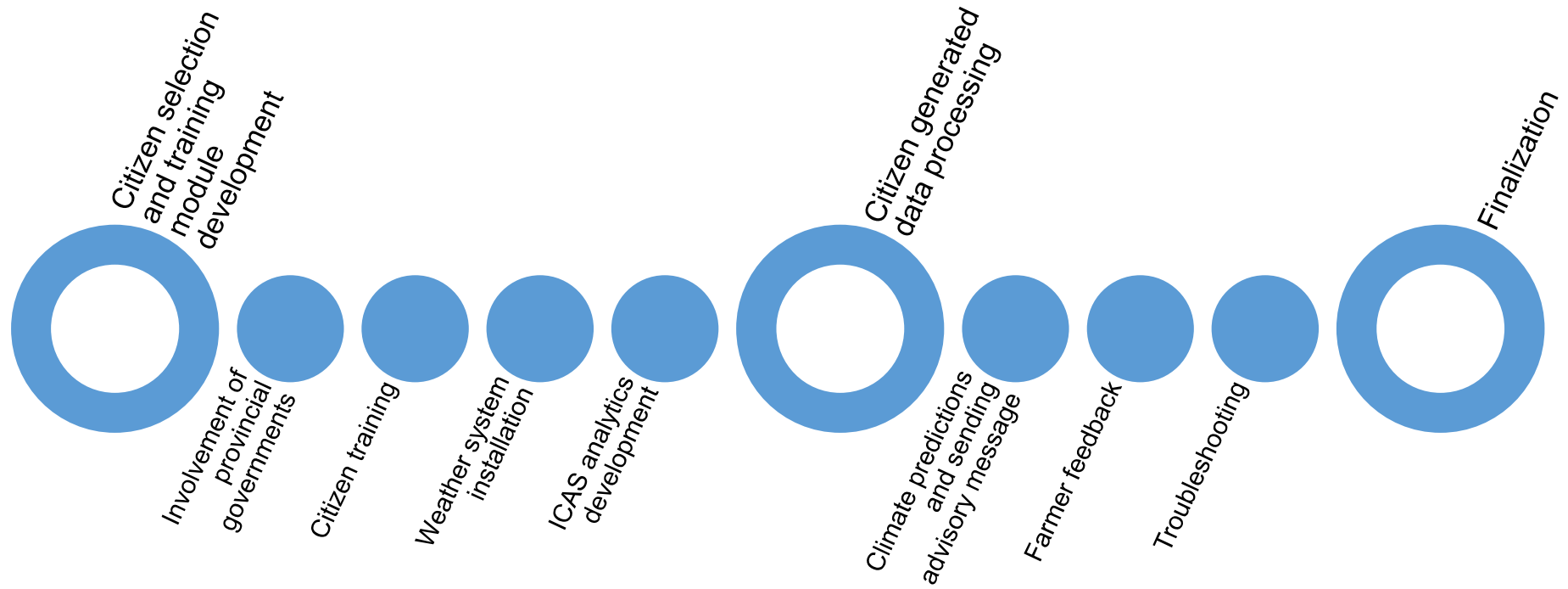
Delivery of Text message to farmer through Jazz portal



کسان دوست آپ کے علاقے بہاولپور میں پچھلے ہفتے (2 تا 8 جولائی) میں فصلوں نے (ک) پاس = 0.9، گنا = 2.5 (انچ) پانی استعمال کیا۔ مزید برآں اگلے ہفتے میں بارش متوقع نہیں ہے۔ لہذا اس کے مطابق آبپاشی کریں۔ مزید معلومات کے لئے 03011173756 پر رابطہ کریں۔ شکریہ!



The Deployment Process of ICAS



Irrigation Advisory Service (IAS) in its present form

- Has the potential to be extended to whole country.
- Beneficiary farmers database development is in process.
- Beneficiary farmer from On Farm Water Management Departments are being included.
- Farmers engaged in other related development projects are also being included.
- Corp Coefficient (Kc) values of 12 crops including 5 major crops (rice, wheat, sugarcane, cotton and maize) are known.
- Customized advisory messages may be extended on demand
- IAS is the best way to communicate with farmers and receive their feedback

Dear Farmer, in your district Hyderabad last week (2-8 July) crops have consumed (sugarcane =2.4 inches, cotton = 1.1 inches and banana = 3.5 inches) water. Moreover, rainfall is not expected next week. Therefore, plan the irrigation accordingly. For more information, please contact: 03011173756. Thank you.

The IAS weekly message is customized to district scale, and crops being grown in the region. Farmer feedback is highly valued; received and recorded through a shared number. Farmer is provided the information on “When to irrigate or how much to irrigated” in terms of inches. A voluntary weather forecast is also included.

What Incentive ICAS would offer

- Prevention of crop yield loss to individual farmers and in large perspective the national losses
- Climate education and community participation in early warning
- People to people relationship for planet; Farmers present in commands of irrigation canals with communities surviving in Indus Delta
- Less expansive, useable and easily accessible data for the benefit of larger number of communities
- Scalability to climate vulnerable communities in the region just like IAS (Expanded to India and Bangladesh)

Thank You

Mr. Faizan ul Hasan, Secretary PCRWR

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Visit Us @ : <http://www.pcrwr.gov.pk>