

Major Knowledge Product taken up so far as on 01-04-2021

S. No	Title of knowledge product	Agency	Cost (INR)Lac	Duration		Physical progress %	Status	Integrated with IndiaWRIS (Yes/No)	Weblink to report or layers
				From	To				
1	High resolution DEM (0.5 m accuracy) for an area 58460 Sq km	SOI	5200	Jun-19	Oct-21	15%	15%Work completed	Not Yet	NA
2	3-5m DEM and geodata base(1; 25000) maps (8 lakh sq km)	SOI	3700	Jul-19	Mar-21	25%	25% work completed	Not Yet	NA
3	Geoid model (UP and part of UK , Bihar , WB , Jharkhand, Othrometric height can be calculated using elipsoidal height.(complete) for_ Gw station	SOI	1280	Jan-18	Oct-20	100%	100% completed. SOP for GNSS observations to deduce height from Geoid model has been provided to NPMU.	Not Yet	NA
4	CORS network completed UP and UK (continuously operated reffering stations 73 nos) 50 km apart	SOI	2000	Jan-20	Jan-21	100%	completed	Not Yet	NA
5	Web features services / layers/ attributes from 1:50000 topomap (completed)100% progress	SOI	0		Jul-20	100%	Completed and will be continued in future for other data	Not Yet	NA
6	Real-time Operational Spatial Flood Early Warning System Development	NRSC	1496.1	2017-18	2023-2024	40%	Acquisition of ALTM DEM over Godavari Basin is completed, Preprocessing of ALTM DEM is completed, Development of Flood inundation Model and calibration and validation using ALTM DEM is in progress. Inundation simulations for different return period is in progress. Flood forecast model development completed, FF Model calibration and validation completed, Inundation simulation models calibration and validation in progress (50%), Inundation simulations for different flood return periods is in progress.	No	<ul style="list-style-type: none"> Bhuvan-NHP Web portal developed and the to be made live after internal quality evaluation of products The above will be integrated with India-WRIS
7	Development of Satellite-based Regional Evaporative Flux Monitoring System for India	NRSC	1029	2017-18	2023-2024	55%	<ul style="list-style-type: none"> Model framework developed for satellite based near real time daily Actual Evapotranspiration (AET) product generation. Near Real Time experimental daily AET product derived since 1-April-2019 using satellite and meteorological datasets at 5.5 km spatial resolution. Comprehensive field-based instrumentation setup (network of 10 Open path eddy covariance system and one large aperture Scintillometer) is planned . Bid document for of open path eddy covariance system floated in March 2020 in e-procurement portal Government of India. Price bid opened for procurement process. Purchase order (P.O) will release soon for procurement of open path eddy covariance system network (10 units) . 	No	<ul style="list-style-type: none"> Bhuvan-NHP Web portal developed and the to be made live after internal quality evaluation of products The above will be integrated with India-WRIS
8	Glacial Lake Outburst Flood (GLOF) Risk Assessment	NRSC	1453.6	2017-18	2022-2023	60%	<ul style="list-style-type: none"> Prepared inventory of glacial lakes (32,587) of size greater than 0.25 ha for entire catchment area of Indian Himalayan river (Indus, Ganga and Brahmaputra) basins (~9.8 lakh sq.km) using Resourcesat-2 LISS-IV multispectral satellite data. Indus basin has 5,335 lakes, Ganga (4,707) and Brahmaputra (19,931) river basins. Glacial lake attributes (21 type) are also generated for Indus and Ganga basins and is in progress for Brahmaputra river basin. Ranking of glacial lakes for Indus and Ganga river basins completed and selected 5 critical glacial lakes. Glacial Lake outburst Flood (GLOF) simulation modeling using High resolution DTM for Indus basin is in progress. Brought out Glacial Lakes Atlas of Indus river basin and was released by Secretary, MoJ, DoWR, RD&GR on 02 Dec, 2020. 	No	<ul style="list-style-type: none"> Bhuvan-NHP Web portal developed and the to be made live after internal quality evaluation of products The above will be integrated with India-WRIS

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9	Development of spatial snowmelt runoff product in the Indian Himalayas	NRSC	328.7	2017-18	2023-2024	55%	<ul style="list-style-type: none"> Developed short-term (T+3days) snowmelt runoff forecasting model based on energy balance approach using satellite derived inputs for entire catchment area of Indian Himalayan river (Indus, Ganga and Brahmaputra) basins (~9.8 lakh sq.km). Provided experimental spatial snowmelt rate forecast on daily basis and 3-day forecast (T+3 days) during 1st April to 30th June 2019 and 2020. The generated products are shared with NPMU-NHP. 	No	<ul style="list-style-type: none"> Bhuvan-NHP Web portal developed and the to be made live after internal quality evaluation of products The above will be integrated with India-WRIS
10	Operational National Hydrological Modelling System for the entire Country	NRSC	574.8	2017-18	2023-2024	55%	<ul style="list-style-type: none"> National level hydrological modelling framework operationalized with daily estimation of water balance components at 3min (~5.5km) grid level Daily grid wise Surface Runoff, Evapotranspiration and Soil Moisture are hosted on Bhuvan and are shared with NHP-NPMU for hosting on India-WRIS/NWIC Daily inflow into major reservoirs of India are estimated for past and future time step Value added products like: Inflows into major reservoirs, Drought indicators (Standardized Precipitation Index, Standardized Runoff Index, and Soil Moisture Availability Index). Soil moisture deficit based Irrigation Demand are developed 	Yes (https://indiawris.gov.in/wris/#/soilMoisture)	<ul style="list-style-type: none"> Bhuvan-NHP Web portal developed and the to be made live after internal quality evaluation of products The above will be integrated with India-WRIS
11	Operational hydrological drought services using remote sensing data	NRSC	765.8	2017-18	2023-2024	60%	Experimental drought products such as Standardized Runoff Index (entire India), Standardized Groundwater Index (for Telangana) and Standardized Reservoir Storage Index (reservoirs in Krishna and Godavari basins) are being generated operationally. Operationalization of Standardized Surface Water-spread Index. Currently working towards development of a Composite Hydrological Drought Index.	No	<ul style="list-style-type: none"> Bhuvan-NHP Web portal developed and the to be made live after internal quality evaluation of products The above will be integrated with India-WRIS
12	Satellite data-based inputs for Irrigation Scheduling for a selected Irrigation Project command area	NRSC	432.3	2017-18	2023-2024	40%	<ol style="list-style-type: none"> Narayanpur project command area is chosen for the study considering the SCADA system under Hunnasagi branch canal of the command Developed Geospatial database for the Narayanpur Command Area comprising of <ul style="list-style-type: none"> o legendary datasets (Soil, lulc, canal network, command & canal jurisdiction) o season-wise (kharif, rabi and annual) spatial crop maps (2012 to 2018) using multi-date satellite data In-season crop maps (kharif, rabi and annual) and crop extent were estimated through synergistic use of optical and microwave data during 2019 and 2020 Weekly time step spatial irrigation requirement was estimated at distributary canal level considering crop type & extent and meteorological data Developed geospatial model to estimate canal-wise irrigation releases accounting for infield water demand and the conveyance losses in the system. Developed geospatial framework for forecasting 7-day irrigation requirement integrating in-season crop information and meteorological data 	No	<ul style="list-style-type: none"> Bhuvan-NHP Web portal developed and the to be made live after internal quality evaluation of products The above will be integrated with India-WRIS
13	Basin wise EHP model for medium- & long-term forecast (Cauvery, Narmada and Yamuna)	CWC	2675.67	Jun-20			Started . Inception submitted and work in progress	Not yet	Not yet
14	Physically based mathematical modelling for sediment rate estimation and sediment transport in the 7 river basins	CWC	1311.8	Oct-20			Started .Team mobilisted	Not yet	Not yet
15	Early Flood Warning System (EFWS) including inundation forecast in Ganga Basin	CWC	1500				Technical / Financial evaluation is in progress. will be awarded by April 2021	Not yet	Not yet

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16	DSS for Integrated Reservoir Operations for Ganaga Basin	CWC	582				Technical / Financial evaluation is in progress	Not yet	Not yet
17	Development of DSS (PM) Tool	NIH	350	Jul-19	Jun-20	60%	Submission 3 : model conector report has been submitted	Not yet	Not yet
18	Web-based dynamic IT desktop and Android-based mobile application for performance evaluation of irrigation project(NIH-1_2016_1)	NIH	47	Mar-18	Mar-21	71%	Impact and performance evaluation of three and seven dams is under progress. Survey is completed. Will be completed by september 2021	Not yet	Not yet
19	Information System of Himalayan Springs for Vulnerability Assessment and Rejuvenation (ISHVAR, ईश्वर) and a spring data collection app in KoBo(NIH-21 2017 31)	NIH	69	Mar-18	Mar-22	75%	Spring identification , web site development , detailed investigation, instrumentation Completed , Geological work is in progress	Not yet	Not yet
20	Studies on Occurrence, Distribution and Sustainability of Natural Springs for Rural Water Supply in Parts of Western Ghats, India (NIH-18 2017 28)	NIH	54.54	Mar-18	Mar-21		Mobile app and web application are developed.Likely to be completed in time	Not yet	Not yet
21	Mobile/web-based application for WR managers and farmers for optimal release and management of water resources(NIH-28_2017_69)	NIH	64.36	Mar-19	Mar-22		Work is in progress in data collection, mapping, observation/ experiment site identification and water balance analysis and soil and pump tests .	Not yet	Not yet
22	Decision Support Tool and Mobile Application for Efficient Utilization of Water(RAJ-4_2017_57)	NIH	86	Mar-19	Mar-22	20%	The work need to expedited. Hydrological data collection , canal flow data collection are in progress. Overall progress is not much 20%	Not yet	Not yet
21	River Basin model for Integrated Reservoir Operation & Water Accounting of Narmada River Basin including Development of Nodal Centers & Interface software/ Networking	NCA	229	Oct-19	Oct-21	60%	Draft final report on modelling has been submitted	Not yet	not yet
22	Shore line management plan Goa	Goa	1535	Nov-19		20%	Inception submitted . Work is in progress	not yet	not yet