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| **Annex 1: Results Framework and Monitoring** |
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| **Project Name: National Hydrology Project (P152698)** |
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| **Results Framework** |
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**Project Development Objective Indicators**

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| **Name of Agency** |  |  |
| **Indicator Name** | **Overall** | **Agency** |
| **Baseline** | **End Target** | **Baseline** | **End Target** |
| Water Resources monitoring stations operated by implementing agencies providing validated data online(Number) | 1500.00 | 5000.00 |  |  |
| - Surface Water stations(Number - Sub-Type: Breakdown) | 100.00 | 1000.00 |  |  |
| - Groundwater stations(Number - Sub-Type: Breakdown) | 1000.00 | 5000.00 |  |  |
| - Meteorology stations(Number - Sub-Type: Breakdown) | 500.00 | 1500.00 |  |  |
| Information products produced under the project made available to the stakeholders(Number) | 5.0 | 50.00 |  |  |
| Water Resources Institutions achieving benchmark performance levels(Number) | 10.00 | 25.00 |  |  |
| Number of trained clients |  |  |  |  |
| Number of WRIS unique visitors |  |  |  |  |
| Beneficiaries that feel project investments reflected their needs(Percentage)??? | 0.00 | 50.00 |  |  |
| Water data centers functioning satisfactorily(Number) | 10.00 | 20.00 |  |  |
| Annual increase in number of page views(Percentage) | 5.00 | 10.00 |  |  |
| **Indicator Name** | **Overall** | **Agency** |
| **Baseline** | **End Target** | **Baseline** | **End Target** |
| River sub basins publishing water availability report regularly(Number) | 3.00 | 30.00 |  |  |
| Critical streamflow forecasting stations with improved lead time(Number) | 200.00 | 400.00 |  |  |
| Food risk area benefitted from advanced flood forecasting and management(Square kilometer(km2)) | 40000.00 | 100000.00 |  |  |
| Targeted professionals trained(Number) | 0.00 | 2000.00 |  |  |

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| **Indicator Description** |
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| **Project Development Objective Indicators** |
| Indicator Name | Description (indicator definition etc.) | Frequency | Data Source / Methodology | Responsibility for Data Collection |
| Water Resources monitoring stations operated by implementing agencies providing validated data online | Online data will be at the centralized data center at State or central level. The accuracy will be validated using the database management software already available for quality control. Only stations that provide accurate data for at least 80% operational time will be accounted for. | Annual | WRIS | IA |
| - Surface Water stations | Surface stations include stations for monitoring stream flows, water body levels, water quality and sediment. | Annual | MIS | NPMU |
| - Groundwater stations | Groundwater stations include groundwater level recorders, water quality and tube well discharge monitoring stations. | Annual | MIS | NPMU |
| - Meteorology stations | Meteorology stations include rain gauges, automated weather stations, and snow gauging stations. | Annual | MIS | NPMU |
| Information products produced under the project made available to the stakeholders | Measures the availability of products of Component B, including topographic surveys, digitized maps, earth observation data products, ensemble forecast products, web-based analytical tools, forecasting materials, water accounting reports etc. The criterion is that the products should be easily accessible to the relevant stakeholder, i.e. online, mobile, shared through email, or in events. The relevant stakeholder is the user for whom the product is intended. | Annual | NPMU/NWIC | WRIS |
| Water Resources Institutions achieving benchmark performance levels | Water resources institutions would refer to central and state level water resources departments including irrigation, groundwater, water resources department training centers and concerned societies. Benchmark standards to be set during the first year of the project and to include measures of: professional staff in place, training programs being conducted, applications (e.g., modeling tools, etc.) in use. | Annual | NPMU will measure performance against benchmarks. | NPMU |
| Direct project beneficiaries | Direct beneficiaries are people or groups who directly derive benefits from an intervention (i.e., children who benefit from an immunization program; families t hat have a new piped water connection). Please note that this indicator requires supplemental information. Supplemental Value: Female beneficiaries (percentage) . Based on the assessment and definition of direct project beneficiaries, specif y what proportion of the direct project beneficiaries are female. This indicator is calculated as a percentage. | Annual | MIS; WRIS | NPMU/ WRIS |
| Female beneficiaries | Based on the assessment and definition of direct project beneficiaries, specify what percentage of the beneficiaries are female. | Annual | MIS, WRIS | NPMU/WRIS |
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| **Intermediate Results Indicators** |
| Indicator Name | Description (indicator definition etc.) | Frequency | Data Source / Methodology | Responsibility for Data Collection |
| Beneficiaries that feel project investments reflected their needs | Percentage of users of WRIS satisfied. | MRT and ICRR | Survey | NPMU |
| Water data centers functioning satisfactorily | Measures the performance of the state and national water data centers established or upgraded under Component A. Benchmark standards include the following indicators: required infrastructure for database management, trained staff; data sharing process with center and public; and ease of access. | MTRs and ICRR | MIS, rating criteria | NPMU |
| Annual increase in number of page views | The target will be set with respect to baseline and cumulative % increase will be the target over project period. This will include both central as well as state WRIS. | Annual | IndiaWRIS, State WRIS | National Water Informatics Center/NPMU will assess based on the criteria for performance. |
| River sub basins publishing water availability report regularly | Measures the number of river sub basins (CWC definition) publishing dynamic (monthly/seasonal) accounting for storages, inflow forecast and projected demands. | Annual | MIS | Central and State IAs |
| Critical streamflow forecasting stations with improved lead time | Number of critical stations/reservoirs (with major population centers or important infrastructure) where flood forecast is improved with increase in lead time. This will be primarily achieved through integration of forecast models with weather forecast and real time data acquisition systems. | Annual | States MIS | IAs will assess the performance of models. |
| Food risk area benefitted from advanced flood forecasting and management | Advanced flood forecasting would include streamflow forecasting, reservoir operation and warning systems. It measures the area historically subject to flooding where flood risk is reduced or averted due to advanced flood forecasting and management introduced or facilitated by the project. The baseline flood affected area will be calculated from historical information. The area downstream of streamflow forecasting stations would be considered to benefit from improved lead time. | Annual | MIS | NPMU |
| Targeted professionals trained | The number of participants who benefit from structured training over the project period. Minimum threshold value will be set by NPMU e.g. 20 days to capture only those who are extensively trained. | Annual | MIS | IA |