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Government of India
Ministry of Jal Shakti
Department of Drinking Water and Sanitation
(National Jal Jeevan Mission)

12th Floor, Pt. Deendayal Antyodaya Bhawan,
CGO Complex, Lodhi Road,
New Delhi – 110 003

Dated December 10, 2020

To,

Addl. Chief Secretary/ Pri. Secretary/ Secretary,

Rural Water Supply/ Public Health Engineering Department,
All States/ UTs

Subject: Provision of assured tap water supply to every rural home under Jal Jeevan Mission in mountainous, hilly and forested areas: Gravity-based water supply systems – reg.

Madam/ Sir,

The undersigned is directed to refer to above-mentioned subject and to state that the core objective of the Jal Jeevan Mission is to ensure piped water supply in adequate quantity with prescribed quality on long term and regular basis through Functional Household Tap Connection to every household by 2024. As per Operational Guidelines for the implementation of JJM, para 3.5 vi.), the one of the strategies for provision of drinking water supply under the mission is as under:

"In tribal/ hilly/ forested areas, option of gravity and/ or solar power-based water supply schemes with low O&M expenditure to be explored and preferred. In hills and mountains, springs as a reliable source for drinking water to be explored;

2. Further, in order to have lowest O&M expenditure after commissioning of the scheme, under para 3.5 xxvii.) state that

"While deciding in-village water supply system, three options with possible least cost water supply systems will be presented before the Gram Panchayat and/ or its sub-committee, i.e. VWSC/ Paani Samiti/ User Group, etc. by PHED/ RWS Department with complete techno-economic and socio-economic analysis involving community using communication tools such as PRA activities, etc. While deciding the system and its location, etc., emphasis on low O&M cost and capacity of local community to operate and maintain the same will be taken into account.

3. In view of this, it is requested that piped water supply schemes to provide potable water to every home, should be designed in such a way that Capex as well as operational expenditure should be minimum. In mountainous, hilly and forested areas, while preparing/ approving the water supply schemes, it may also be seen that local community is able to manage, operate and maintain the water supply system. In this context, option of gravity-based water supply systems vis-à-vis multi-stage pumping based system should be carefully appraised and compared by considering the whole project life cycle cost.

4. It is appreciable that in many mountainous and hilly States/ UTs, gravity-based systems are taken up for easy management, operation & maintenance, and also to reduce the

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vulnerability of local community especially due to heavy rains and resultant land slips/ landslides and communication and power supply breakdown, road obstruction affecting reach and supply, etc. However, in some cases, it has been observed that multi-stage pumping schemes are being taken up requiring large capital investments and subsequent high O&M expenditure. It appears that option of gravity-based system has not been considered. This is not in sync with the objective of Jal Jeevan Mission, which is focusing on decentralized, community-managed drinking water supply systems and assured service delivery at affordable cost as well easy to operate and maintain. Pumping schemes require additional equipment/ spare parts and skilled manpower to install and maintain, which may be a challenge for seamless operation & maintenance by local community in the hilly and tribal areas.

5. Considering diverse challenges in the hilly and tribal areas, in order to have cost-effective solutions, it is recommended to consider gravity-based piped water supply schemes, which will be easy to maintain with low operation & maintenance cost as compared to multi-stage pumping schemes. While deciding between the two options the risk of failure of water supply service delivery and mitigation cost should also be considered along with project life cycle cost.

6. It should be standard practice to map all perennial surface water sources such as springs, natural streams, water bodies, etc. available in or around villages and study factors like lean season discharge, water level, water quality, etc. on habitation map of the village and then design the optimal scheme for the village.

7. In the absence of a sustainable gravity-based water source in nearby project area/ villages, decentralized groundwater or surface water based pumping scheme may be considered that can be operated and maintained by local community. Further, if terrain permits, high efficiency pump should be used to lift the ground water into a high-level reservoir from where distribution network should be designed.

8. Keeping this in view, you are requested to ensure such cost-effective piped water supply systems under Jal Jeevan Mission, which are easy to operate and maintain for assured potable tap water supply to every rural home.

Yours faithfully,



(Pradeep Singh)

Additional Adviser (PHE)

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Copy to, for information and necessary action:

- i.) Mission Director/ Engineer-in-Chief/ Chief Engineer of all States/ UTs.
- ii.) All Director/ DS/ Technical Officers/ Team Leaders of NPMU

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