Farm Ponds

What is the issue?

- Many parts of India are reeling under water stress.
- A number of peninsular regions have been facing recurring drought-like situations.
- This may be caused due to an increased variability of monsoons and rapidly depleting groundwater tables.

What is current situation?

- Given the enormity of the crisis, Prime Minister explained the need to implement innovative water management measures, at a recent NITI Aayog meeting.
- He stressed on the importance of rainwater harvesting both at the household and community levels.
- Here, an intervention that has been tried out and perhaps needs to be taken up on a bigger scale is the construction of farm ponds.

What are the benefits of farm ponds?

- Cost-effective structures
- Enhances water control, contributes to agriculture intensification and boost farm incomes
- These ponds are a financially viable plan, with a fairly high Internal Rate of Return.
- However, this is possible only if they act as rainwater harvesting structures and not as intermediate storage points for an increased extraction of groundwater or diversion of canal water.

What does the recent study say?

- Farm ponds aid in superior water control through the harvesting of rainfall, surface run-off and subsurface flows.
- Some of them functioned exclusively as recharge points, contributing to groundwater replenishment.

- They also helped in providing supplemental irrigation in the kharif season and enhanced irrigation coverage in rabi.
- The yield of paddy stabilised, thus contributing to greater food security.

What is its retention capacity?

- Farm ponds can retain water for 8-10 months of the year.
- This means that the farmers could enhance cropping intensity and crop diversification within and across seasons.
- Increase in area used to cultivate vegetables and other commercial crops.
- These ponds are being used as intermediate storage points, accelerating groundwater depletion and increasing evaporation losses as the groundwater is brought to the surface and stored in relatively shallow structures.

What is the need for inlet, outlet provisions?

- Maharashtra government is promoting farm ponds under a flagship programme by offering a subsidy of up to ₹50,000 per farmer.
- However, most of them are being constructed without inlet and outlet provisions and their walls are raised above the ground level by only a few feet.
- They cannot arrest the excess run-off as there is no inlet, so they cannot be used effectively for rainwater harvesting.
- Further, farmers line them at the bottom with plastic, restricting seepage and converting the ponds into intermediate storage points.
- Such farm ponds have an adverse impact on the water tables and accelerate water loss.
- The usual practice here is to lift water from a dug well or a bore well, store it in the pond and then draw it once again to irrigate the fields, often using micro-irrigation.

What could be cause obstruction and how to stop it?

- Offering a secure irrigation facility will intensify competition for extraction of groundwater from the aquifer.
- In such cases, farmers fill up their farm ponds first when the canal is in rotation and then take it from the pond to the field.
- This can obstruct the circulation of water.
- During canal rotation, the aquifer will get recharged because of the return flow of water coming from the irrigated fields.
- This return flow benefits all, as most of the farmers access water though wells in this command.
- But if canals fill up the farm ponds first, it restricts their benefits only to the

pond owners and, in the long term, reduces the overall return flow at the system level.

What is the conclusion?

- Overall, farm ponds can act as effective harvesting structures and also yield healthy financial returns.
- But if they are promoted merely for on-farm storage of groundwater and canal water, they could accelerate, rather than reduce, the water crisis in the countryside.

Source: The Hindu