

Certificate Course on Participatory Irrigation Management (PIM)

Module 7- Water Measurements and Water Distribution by Water User Associations (WUAs)

Topic 7.4 – Emerging trends in Warabandi

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Emerging trends in Warabandi

Topics of Module 7:

- 7.1 Objective of water measurements, discharge structure and units
- 7.2 History of Warabandi
- 7.3 Implementation of Warabandi in current scenario
- 7.4 Emerging trends in Warabandi

1. Emerging Trends in Warabandi

1.1. Difficulties in Present Warabandi System

Though warabandi is supposed to be the best method of water distribution, but due to change in circumstances following difficulties are being felt in it.

- I. Due to deforestation in river catchments discharges in rivers have reduced and the canals are not getting designed discharges. Consequently, the warabandi is adversely affected, since warabandi is designed on the assumption of the canal running at full discharge. It poses difficulty in operation.
- II. Emergence of High Yielding Varieties poses another difficulty in operation. As the old varieties were able to sustain in lack of water for some times but the new varieties are more susceptible to water shortage. The farmer is not happy with the situation if warabandi fails for any reason and desire change.
- III. Duties of officers & officials of water resources department are quite diversified and loaded heavily with non-engineering works. It consumes lot of their time and they have practically no time for monitoring warabandi. No review or mid-term corrections are made in warabandi making it non-functional.
- IV. Running of canal according to roster is an essential condition for success of warabandi, but in present situations officers / officials being under local pressure disrupt the canal roster which affect the success of warabandi.

1.2. Defects of present warabandi

Though warabandi is best and easiest process of water distribution but there are certain bottlenecks/ difficulties in ensuring equity which are required to be resolved.

1. The water continues to be lost during its travel from head to tail even in field gules which is not considered while scheduling water timings for head and tail reach farmers. It results in lesser quantity reaching to tail farmer having same area as the head reach farmers.
2. Kind of soil is not considered while warabandi is scheduled as generally heavy soils exists in the head reach and lighter one at tails. Lighter soils have lesser water holding capacity therefore tail farmers get lesser quantity of water for their crops again.
3. Crop water requirement is not considered while fixing water times. The crops which require lesser water are provided equal time of the crops of higher water demand which promotes the wastage of water.

4. The area of landholding of a farmer is considered in scheduling warabandi. The size of landholding is ignored. The small land holding farmers are not able to use water in better way having lesser opportunities in comparison of larger land holders as they can optimise the water and may have better results as they have more options for its utilization.
5. Till now the water resource department prepares warabandi for a long period at prevailing rules with the limited staff in which change in cropping pattern during the period cannot be accounted for.
6. At present neither the warabandi nor roster is monitored or evaluated, and the mistake committed once goes on continuing.

Therefore, it is required in the light of above to revisit the present system of warabandi and new principles be laid down eliminating above shortcomings.

These may be following.

Points to be considered while developing new principles.

- How much discharge is flowing in canal?
- Present physical condition of canal?
- Estimation of difficulties faced during implementation of last warabandi and how these can be overcome?
- Estimation of the crop to be sown in the coming season.
- Is there any difficulty in carrying water to tail? If yes how it can be overcome? Decide it on priority basis.
- To consider involvement of farmers in warabandi preparation and provide training to them.
- Fix accountability for implementing warabandi at outlet level.
- Keep account of water distribution.

1.3. Process of preparing water distribution schedule (Warabandi) involving Water Users' Association.

1. Being at the lowest level, warabandi should be prepared at outlet level. Existing closest with the farmers it would be better to get it prepared by lowest level WUA, that is, management body of Outlet committee or Pani Panchayat with consensus of farmers.

2. The management committee should take approval of general body of the WUA. The amendment should be taken in account if suggested by general body.
3. The warabandi duly approved by general body of outlet committee be submitted to higher level WUA / WUA at minor level.
4. The warabandi duly verified by minor level WUA be submitted to divisional officer for approval.
5. The divisional officer should return the warabandi to minor level WUA after scrutiny and correcting mistake if any.
6. The warabandi duly approved by divisional officer should be handed over to concerned outlet level WUA for implementation by minor level WUA.
7. The water resource department prepare a long time warabandi to avoid manual labour involved in it. The WUAs now may prepare it crop season wise which can take into account the change in cropping pattern. Warabandi now can be prepared on excel sheets of computer by developing a small software.
8. Warabandi may now be monitored by higher level WUAs.
9. Micro Irrigation technique is now being in use at wider level and increasing day by day, therefore, taking this change in consideration the warabandi should now be prepared network node wise in place of outlet wise.
10. The ground water has been considered as a separate resource and never accounted for in warabandi. With the idea of conjunctive use of both the resources the ground water should now be taken in warabandi considering both the resources as one.
11. On several canal systems, tanks have been constructed at outlet heads and warabandi has been fixed at tank head from where the farmers may transport their share of water through flexible pipes to their fields saving water losses in earthen gules. This method may be adopted at all canal systems.