

PARTICIPATRY IRRIGATION MANAGEMENT FOR FOOD SECURITY

G.R. Kulkarni

chairman M.J.FULE panivapar santha Ozar (mig), Waghad irrigation project

ABSTRACT

India have history of participatory irrigation management. Up to mughal rule irrigation systems was made and are handed to peoples for management. But from British rule wrong policies removes farmer devotion in irrigation water management . Same condition remains as it is after independence. Though huge number of Dams are constructed there is no much increase in irrigated area leading deadly affect on food production. On other hand due to increasing population Question of food security is arising which results need to grow high yielding verity of food grain which needs irrigation water on the other hand availability of water decreasing. Decreasing rainy days, fall in ground water level. At such condition only surface water is remained . So for optioning high yield we have to concentrate on efficient use of dam water and that can be achieved only by farmers devotional participation which is the base of P.I.M. which leads not only increase in irrigated area but also increase in number of irrigations resulting increase in per hector productivity of food grain. Collectively data in 3 W.U.As command at ozar (Tail end of waghad irrigation project) shows with participatory irrigation along with increase in irrigated area there is increase in per Ha. production of food grain. For optioning secured food to each stomach. we must target to increase per unit agricultural productivity of dam water. P.I.M. is the best way for this. Along with food security, financial security ,Employment security, revenue security can be obtained. Our target is not only to achieve food security in quantity but in quality also. Because due to scarcity of quality food health level of community is decreasing. So we have to focus on stretching of P.I.M.By bringing awareness about all these in grass root level i.e. farmer. without farmers devotional participation and efficient irrigation food security cannot be achieved.

Irrigation in agriculture plays major role in food production. (60% of wheat production in developing countries are partially or fully irrigated.) Watering of crops is mainly depends on availability and reliability of water. In case of dam water distribution there is no much difference in percentage of availability and reliability which affects on irrigated area and number of watering in that particular command. Archiving target of optimum food production the percentage of availability and reliability should be same. And for bringing equal percentage particularly irrigation management is must in dam water irrigation. Participatry irrigation management is software working with hardware like dam and canal.

Secured food to each stomach is the real definition of food security. But due to increasing population availability of food going on decreasing. Unequal distribution, purchasing capacity are the reasons which create need of food security. **Irrigation water is one of the major factor affecting on food security.** India have history of participary irrigation management Varabandi , Phad padhat Malguzari talav are the good examples of people involvement in irrigation water management. Up to mughal rule irrigation systems was made and are handed to peoples for management. But from British rule to make hold on irrigation water some wrong policies was made which remove farmers devotion in irrigation water management. Same condition remains as it is after independence. Though huge number of dams are constructed there is no much increase in irrigated area leading deadly affect on food production. On the other hand due to increasing population Question of food security is arising which results need to grow high yielding verity of food grain and for high yielding verity needs irrigation water on the other hand availability of water to Ha is decreasing. Due to climate change rainy days are decreasing . Un controlled pumping leads fall in ground water level. At such condition only **surface water** . So for optioning high yield we have to concentrate on efficient use of dam water and that can be achieved only by farmers devotional participation which is the base of P.I.M. which leads not only increase in irrigated area but also increase in number of irrigations resulting increase in per hector productivity of food grain. Along with **food seacurity**, financial sea-

curity, Employment seacurity, revenue seacurity can be obtained. .Collectively data in 3 W.U. As command at Ozar near Nashik dist. of Maharashtra state of India. [**About Ozar-** Ozar is tail end of Waghada irrigation projects command. Situated on national highway no.3 towards the Agra at distance of 200 km from Bombay. With participatory irrigation along with increase crop density, irrigated area, availability of water unit to Ha. employment generation, government water revenue are increased. 2nd class irrigation was on river Banganga. Along with this up to 1968 there PIM was present in Ozar. Farmer was constructing small temporary check dams on nala named **satvai** nala and distribute water among them selves for paddy and chili. But due to climate change this nala was dead leading collapse of PIM. Later on waghada dam was constructed but ozar farmer was thirsty for dam water. With motivation of samaj pari varthan kendra (local voluntary origination)farmer reunite for PIM in the form of Water User Association]

SILENT FEATURES OF OZARS PIM.

- ❖ Availability of dam water is only 8 inches to a Ha.

Looking towards the 10,000Ha I cut only 2 flood rotations can be done but with well planned irrigation programmed and conjunctive use of water, drip irrigation 5 to 6 rotations are done.

- ❖ Tail to head irrigation.

When water release from dam it first goes to last minor of the canal, then to last outlet , then last farmer of that outlet.(Putting last to first)

- ❖ 12 month irrigation in 8th month water.

Waghada irrigation project is 8th month project. But as per mentioned in MOU farmer can save dam water in rabbi and can kept in dam for hot whether use.

- ❖ Conjunctive use of water. (Team work of surface & ground water)

This is a phenomenon of watering crop in which surface water (Dam water) and ground water (well water) are Jointly used for watering same crop in command area. During Canal irrigation while watering to crop some of the water percolate in the land and gets converted into ground water by which open wells and boor wells get re-charged. When ever there is need of water to crop in between two rotation at that time farmer uses his own well water for crop resulting conjunctive use of water. Conjunctive use of water increases the efficiency of irrigation and in productivity of water unit. It also increases crop density seasonal cropping pattern get converted to perennial cropping pattern, resulting financially sound farmer in the command area of W.U.A. For efficient conjunctive use there must be broadly implantation of water conservation. As more and more water is conserved. Ground water increases results in recharge wells and reduction in water losses during next coming rotation .

W.U.As at Ozar in Nasik dist of Maharashtra state.(Jay Yogeshwar, Mahatma fule, Banganga)

Sr.No	Year	Irrigated area Ha.	Number of Rotations	Ave Grain produce (Ton/Ha)	Employment generation (Month/Year)	Water tax paid
1	1990	Negligible	Hardly	0.3	2	Not aval
2	1995	531.88	4	1	4	50,125/-
3	2000	713	5	1.5	6	92,803/-
4	2005	723	5	2.3	9	2,35,000/-
5	2010	728	5	3.1	10	2,38,000/-

increase in par Ha. production from 0.3 tons to 3.1 tons.

Observing above data it is clear. There are

- **10 times increase in food grain production.**

- 5 times increase in employment.
- 5 times increase in water revenue.

Increase in Irrigation through P.I.M. in Maharastra state.

Sr.No	Year	2006	2008	2011
1	No of W.U.As	1,614	2,578	4,655
2	Irrigated area (Ha)	5,37,146	10,53,181	17,68,085

So we have to focus on strengthening of P.I.M. By bringing awareness about all these in grass root level i.e. farmer. without farmers devotional participation and efficient irrigation food security cannot be achieved .

:

SOME POINTS WHICH ARE MUST FOR SUSTAINABLE PARTICIPATORY IRRIGATION MANAGEMENT (PIM).

- ❖ Volume base water distribution.
- Tail to head irrigation.
- Water entitlements.
- Freedom of cropping pattern.
- Right to make Irrigation program.
- Efficient training program's, for awareness & capacity building.

Looking towards the increasing population for obtaining secured food to each stomach. we must target to increase per unit agricultural productivity of dam water. Our target is not only to achieve food security in quantity but in quality also. Because due to scarcity of quality food **health level of community** is decreasing.

BRIEF PROFILE OF THE AUTHORS

Govardhan.R.Kulkarni-Ex-chairman M.J.FULE panivapar santha Ozar(mig), [waghad irrigation project] Tal-Niphad,Dist-Nashik,State-Maharastra Pin-422206 INDIA ---- Third generation of kulkarni family working in PIM. Works 20 years as a participant of PIM.Works 7 years as a body member of WUA.Works 2 year as WUA chairman. Present papers regarding PIM in various state level and National level seminars. Form last 2 years is involved in Rajasthan state of India in WUA training programs. Mo-9890661901,Email-gokul.connect@gmail.com