



PARTICIPATORY APPROACH FOR MANAGEMENT OF WATER RESOURCES OF KATEPURNA SUB-BASIN IN MAHARASHTRA STATE

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ABSTRACT

Katepurna project is a major irrigation project in Katepurna sub-basin. Over the last 25 years, the project could utilise on an average 25% of its irrigation potential. The PIM approach has not only improved its irrigation utilisation, but also it has led to strong demand from farmers to reduce non-irrigation reservation and allocate water for irrigation. The amicable solution has been arrived at, as a result of fruitful dialogue among irrigation and non-irrigation users.

Now with the benefits of Katepurna project accrued to the farmers of Katepurna command, area that is mostly in Purna sub-basin, the farmers in Katepurna sub-basin especially just downstream of dam, were demanding benefits of the project. There was strong agitation by farmers to support their demand. Sinchan Sahyog, a NGO has come forward to bring representatives of stakeholders and users of sub-basin water resources on one platform. The dialogue between users and stakeholders is in progress. Sinchan Sahayog is working on development of better partnership among all stakeholders and users at sub-basin level. A plan will be prepared, with their participation, to make effective use of water resources in the sub-basin catering needs of stakeholders and users.

INTRODUCTION:

Katepurna River is a tributary of Purna River, which further joins Tapi River. The length of Katepurna River till it meets Purna River is about 127 km. The total area of Katepurna sub-basin is around 1194 sq. km. There are 195 villages in the sub-basin, with total population more than 0.3 million. The sub-basin has special feature with hilly region and dense forest in upstream while typical saline belt at down stream end. There is a major river project on river Katepurna near village Mahan. There are few minor irrigation projects in the sub-basin catering irrigation and water supply needs of nearby 2-3 nearby villages. The detail of Katepurna sub-basin is shown in Figure 1.

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KATEPURNA IRRIGATION PROJECT

The Katepurna irrigation project is completed in year 1975. The project envisages irrigation supply to 8325 ha of land, water supply to Akola City and 53 villages in saline belt, where there is no alternative source of fresh water. The command area of project has mostly deep black cotton soil with 45% area falling in saline belt. The distribution network is of open unlined canal.

Katepurna project completed its 25 years of service in 2000, but the project couldn't provide the irrigation benefits as envisaged during project planning. In last 25 years, the project could provide irrigation hardly to 2027 ha. On an average.

The under utilisation of irrigation potential has prompted the government to reallocate water for non-irrigation use resulting in 54% water being reserved for non-irrigation use. It consequently resulted in proposing curtailment of command area of the project and reducing it to 5967 ha.

REASONS FOR UNDER UTILISATION

As project falls under assured rainfall zone, the farmers were not much enthusiastic towards irrigation. Secondly, reluctance among farmers was also due to non-assurance of getting right amount of water at right time. There was heavy wastage of water, which led to problem of drainage and transportation of produce from the command. There were outstanding dues on farmers and as a result the majority of farmers were not using the water. The department could not maintain the canal throughout the length due to less utilisation and shortage of funds. Under such circumstances, there was no co-ordination among beneficiaries and project authorities. Every one was blaming each other for under utilisation of water.

The Katepurna project was one of the worst affected projects in terms of under utilisation in the region. Other projects in the region are also having somewhat similar scenario. Considering this poor utilisation, efforts were made to analyse the situation and identify key areas. The remedial measures are strategically planned and implemented.

MEASURES TAKEN

ENGINEERING MEASURES

Initially, the system repairs were carried out by removing bottlenecks in the system and improving the system. Irrigation scheduling was observed strictly with tail enders to receive water first and head reach farmers at the end. Night irrigation was made compulsory. Due to disciplined distribution, it resulted into adequate and timely supply to farmers. Farmers were encouraged to adopt improved surface irrigation methods through demonstration.

AGRONOMIC MEASURES

Integrated approach of irrigation and agriculture at field as well as administrative level is adopted. Farmers were motivated to go in for crop diversification. Farmers started taking pre-monsoon cotton, followed by rabbi crop e.g. wheat. It resulted in higher yield of cotton. The farmers are also educated to apply water to crop at critical growth stages of crops instead of applying water frequently to crop.

MANAGEMENT MEASURES

Better and reliable, irrigation management and operation practice is followed, considering limitation of system and farmers' requirement. Better co-ordination among farmers and project authorities established at different level involving farmers in decision making and irrigation management of the project.

Awareness campaign conducted for formation of water user's associations (WUAs) and efficient use of water through all possible media available e.g. newspaper, radio, television, exhibitions, posters, cultural programmes etc.

With gaining trust of the farmers and with better services to farmers, the farmers started reacting positively to Irrigation Department's call. Farmers were motivated, trained and convinced about the importance of WUAs'. The privilege and incentives provided for formation of WUAs was explained to them. With initial success in participatory irrigation management (PIM), farmers responded by formation throughout the command of WUAs. The development in formation of WUA is shown in Table 1.

TRANSFER OF MANAGEMENT

Transfer of management to farmers is very important phase in PIM. Generally irrigation personnel are reluctant to relinquish the authority over the system and on the other side, farmers feel that they are burdened with the unwanted responsibility and they try to shrink it or pull on by one or other reasons. Earlier experience of WUAs was not encouraging and thus there was reluctance among WUAs for taking over. Initially, instead of running behind WUA to take over, efforts were made to concentrate on few WUAs and appraising them with concrete benefits of transfer. There was apprehension that once they take over, government will not pay attention towards them even to their rational demand and they will have to face the villagers for any conflict in management owing to condition of canal system. But with setting of initial successful example and seeing benefits accrued to them, WUAs came forward for handing over of management. Their footsteps were followed by other and transfer of management was took place on almost all WUA. The steady and convincing approach has helped in consolidating PIM in the project.

The canal system is handed over to WUA with minimum or no rehabilitation. One should not wait for the system to get completely rehabilitate. As crucial part of PIM is their active participation in irrigation management, WUA will not function properly till responsibility is taken. Therefore, even though rehabilitation of canal system is essential, the transfer of management should not be prolonged till the system gets

completely rehabilitate. On the contrary adequate repairs can be undertaken after the transfer, as active participation of WUA is more important rather than physical rehabilitation.

VOLUMETRIC MEASUREMENT OF WATER

In Katepurna project, there were Standing Wave Flume (SWF) for measurement of water at head of canal and at off-taking branch/distributory canal. Proper account of water was also maintained in prescribed format. At minor head, there was no arrangement for measurement of water. Thus CutThroat Flumes (CTF) are fixed at head of WUA and calibrations of existing SWFs are carried out.

A two-day training programme was carried out with the help of WALMI to train field officer as well as WUA functionaries for volumetric measurement and its accounting. Initially, there was apprehension among common farmers that CTF is obstructing the discharge passing down the system. There were instances of tampering of CTF also, but timely dialogue and enlightening them with functioning of CTF. has removed doubt from their mind.

As the system was handed over to WUA without complete rehabilitation of canal system, WUAs are charged on basis of lower of either volumetric supply of water or area measured. This provision has removed apprehension that they would have to pay more as the system is not in order. At the end of season, it was found that charging on basis of volumetric measurement of water is lower than the area basis. Table No.2 shows, sample example of comparative charging on volumetric and area basis. It can be seen that there is saving in water charges when charged on volumetric basis. Though saving is small, it will increase as the farmers get acquainted with volumetric measurement and use of water saving practices. It resulted into general acceptance among farmers to go for volumetric measurement of water. There is also provision in the act to use water saved in Rabi season, in hot weather season. This provision has encouraged the farmers to go for volumetric measurement and to make efficient use of water. Volumetric measurement of water is key to sustainable irrigation management. In Maharashtra, due to last 10-15 years work in this area, farmers are well acquainted with volumetric measurement and less resistance to volumetric measurement among majority of farmers, which could not found in many parts of country and abroad.

IMPACT OF MEASURES IMPLEMENTED

With persistent effort for participation of farmers in irrigation management, there was record irrigation of 5940 ha in year 2000-2001, which is almost 100% of revised irrigation potential. Also there was complete utilisation of water in reservoir. It can be seen from Table-3 that it was for the first time in the history of Katepurna irrigation project.

It can be seen from Table-1 that WUAs are formed over entire command area of the project. It is really interesting to know that where farmers were reluctant to go for irrigation and were blaming irrigation authority for the state of affairs, are now not only

coming forward to form WUAs but are also shouldering the responsibility irrigation management.

PROJECT LEVEL COMMITTEE

With formation of WUAs on complete command area, for better co-ordination among various WUAs and with the department, project level committee of WUAs was formed. The project committee consists of representatives from WUAs. The executive body of committee has 11 members headed by a chairman. There was unanimous nomination of members as well as Chairman to the committee. The committee was involved right from the preparation of preliminary irrigation programme. The project level committee has helped in developing good co-ordination among various WUAs and the Department.

DE-RESERVATION OF WATER FOR NON-IRRIGATION

The movement of WUAs has resulted in getting irrigation to those who were deprived of water. Some farmers have received water after 10-15 years or even for the first time. The farmers, who had lost the hope, were now assured that they would get water. This has resulted in rapid increase in demand of water for irrigation.

Due to less utilisation in the past, there was curtailment in water reserved for irrigation from 49.45 Mm³ to 27.83 Mm³. It resulted in reducing irrigation potential from 8325 ha. to 5967 ha. Thus farmers were going to be deprived of their right of irrigation. On the contrary, the project was constructed mainly for irrigation and distribution system was already developed. The farmers had lost their land in canal construction and now they were going to be deprived of water. The sense of deprivation was not strong earlier as they were not getting water. But once they found that, the adjacent farmers are getting benefits, the farmers started agitating for their right. There was growing demand from farmers to cancel the additional reservation for non-irrigation and restore their original command. WUAs and their project level committee agitated for review of reservation for non-irrigation use and demanded release of water for irrigation.

It is observed that maximum use for non-irrigation is 24.00 Mm³ as against 46.82 Mm³. It means that the non-irrigation consumers have reserved water exorbitantly higher than their requirement. To find out an amicable solution among all irrigation and non-irrigation consumers, a review of allocation was taken under Chairmanship of District Collector. The consensus was reached among from all sector users, giving rational thought to present and future trends of utilisation. It was agreed to reserve 31.37 Mm³ of water for non-irrigation and release 15.45 Mm³ of water for irrigation use. The additional 15.45 Mm³ of water will be provided for the area, which was earlier proposed for curtailment.

The present review of water use has helped in reallocating water for irrigation, thus providing irrigation facility to those deprived. It is important to note that it was agreed amicably among all users without making any further complication.

The Katepurna project can be cited as a typical example, wherein, because of under-utilisation of water for irrigation, water was reserved for non-irrigation. But, with PIM, there was rapid increase in the irrigation utilisation. It resulted in growing demand for irrigation, which ultimately resulted in better utilisation of available water resources.

KATEPURNA SILVER JUBILEE FUNCTION

A novel function was organised by beneficiaries of Katepurna project on the eve of silver jubilee of the project. The beneficiaries felicitated the project-affected people for their sacrifice and engineers for their contributions. The project beneficiaries also felicitated the Government, for constructing the project, which had changed their lives. Indebtedness ceremony on the eve of Katepurna Silver Jubilee function was organised by beneficiaries to express their sense of gratitude and attachment towards the project. It was a unique gathering of society, the Government and media. Hon. Chief Minister of Maharashtra State chaired the function and commended for organising a novel function. The Chief Minister also called for organising such programmes at other projects to honour contribution of the projects in national development and to reiterate sense of part of the project. This function was appreciated from all corners of the State.

“SINCHAN SAHAYOG”- A NON-GOVERNMENT ORGANISATION

‘Sinchan Sahayog’ is a NGO established at Akola to promote PIM and improve irrigation performance. Sinchan Sahayog is established with inspiration and guidance from Dr. Madhavrao Chitale, Ex-Secretary General, ICID. Sinchan Sahayog working committee has representatives from Agriculture University, Irrigation Department, agricultural industrialist, seed experts, economists, socialists, members of legislative assembly, media personnel and farmers. Broad objectives of the organisation are to promote strategies of the efficient and effective use of available water resources, to undertake training programme, to encourage people’s participation in irrigation management. The Akola centre has contributed in educating, training and providing solutions to farmers. Sinchan Sahyog has taken active participation in promoting farmers to form WUA and to adopt improved irrigation practices. Sinchan Sahayog, Akola had launched water literacy campaign for farmers by demonstrating, educating them water measurement and accounting of water

DISTRICT FEDERATION OF WATER USERS ASSOCIATION (WUAS)

To strengthen the participatory movement in the district, federation of WUAs is formed at district level. The federation will co-ordinate among the WUAs' and with Irrigation Department. It will address issues of WUAs at various platforms to find solution over difficulties in forming WUAs, its working and the development. The federation is registered under the Co-operative Act. To have better co-ordination with irrigation department, federation office is located in irrigation office premises. Establishment of federation of WUAs of district level is the first such attempt in the State.

INSTITUTIONS IN IRRIGATION MANAGEMENT

The federation of WUAs, Sinchan Sahayog and the Irrigation Department is working hand in hand to promote PIM and improve performance of the irrigation project. It has led to positive relationship among farmers, experts from various fields and the department. This experiment has shown very encouraging results. With this integrated approach and mechanism, farmers are coming forward for adoption of latest technology, improving water use efficiency, going in for crop diversification as well as processing and marketing of farm produce.

A FILM ON SUCCESS STORY OF KATEPURNA PROJECT

A film was shot on "Success Story of Katepurna project" highlighting how the participatory approach has helped in better utilisation of water resource of the project and extending benefits to more number of farmers. The film has been found useful in persuading the people to adopt participatory approach in irrigation management.

KATEPURNA TOURISM CENTRE

Katepurna eco-tourism centre was started at project site with a view to provide tourism facility as well as to educate people about water resources of basin and contribution of the project. The centre has helped in creating public awareness about water resources management. Education while Entertainment (Edu-tainment) is found to be very effective in mass education.

SHARING OF KATEPURNA SUB-BASIN WATER RESOURCES

While designing the project, stress was given to provide irrigation and water supply facility to villages in saline belt area which are at the downstream end and covers more than 1/3 of Akola district. Katepurna project has a main dam near village Mahan and Pick up weir at Khambora, which is 17 km away from the dam. The water is released from the dam as and when required to feed the weir, from where the canal off takes. Thus the 45% command lies in saline belt and that too in Purna basin of which Katepurna is sub basin. The domestic water supply is provided initially to Akola, district headquarter and 53 villages in saline belt, but under-utilisation of water for irrigation has resulted additional reservation for water supply to Murtijapur town which is far away from project and also to the number of villages along the Katepurna river. Akola city and Murtijapur town both fall in Purna sub basin.

With the benefits accrued to farmers of Katepurna command, the farmers in Katepurna sub-basins started demanding that they are real stakeholders of water of the sub-basin and they are deprived of water. Barring Katepurna project, there are a few minor irrigation tanks/weirs catering needs of two or three villages. Only farmers along the Katepurna river, upto pick up weir are able to get assured water, but they have to spend heavily on lifting the water.

In year 2002-2003, there was heavy flood in Katepurna river, damaging fields along the river. This has triggered more impatience among farmers in sub-basin, arguing one side they are not getting water of Katepurna and on the other side, they have to face flood damages in a cycle of 8 to 10 years. No doubt, the concerns of farmers in Katepurna sub-basin were genuine. Farmers so demanded construction of new canal from dam foot to cater the irrigation needs of farmers in Katepurna sub-basin. Also it can be seen from the yield in Katepurna project during last 25 years, that there is more availability at project site than its utilisation resulting in spill over from the project. It is not yet tapped in the sub-basin and ultimately it flows to Purna River then to Tapi basin. It resulted in agitation from farmers of the sub-basin to provide irrigation facility. They had also declared that they would not allow the release of water to Akola City as urban people use more water than they are supposed to. On the other hand farmers of Katepurna command (which is mostly in Purna basin) were acknowledging the demand of farmers of Katepurna sub-basin, but were not ready to part with the benefits.

It was observed that Katepurna project receives more yields than that can be utilised. Thus there is overflow from dam and as there is no structure to store the water downstream, the water goes to Purna basin. There is a proposal of construction of lower Katepurna project downstream of the existing Katepurna project. There is another alternative to use the water resources by storing excess water from Katepurna in minor tanks/KT weir through network of existing canal.

The total yield available from Katepurna sub-basin is around 240 Mm³. So far water resources utilised through completed irrigation project is 125 Mm³. The additional 9.32 Mm³ water will be utilised after completion of on-going irrigation project. It is also planned to harness 90.57 Mm³ of water resources through construction of medium and minor irrigation projects. Thus, there is planning of utilisation of 224.46 Mm³ of water resources, which is nearly equal to available yield from the sub-basin. The abstract of completed, on-going and proposed irrigation projects in the sub-basin are given in Table-4. The ground water availability in the basin is varying while groundwater in saline belt is not suitable for water supply as well as irrigation.

DIALOGUE AMONG USERS

Thus to find out an amicable solution to all contradictory demands, Sinchan Sahyog has come forward to bring all the users on one platform to discuss rationally the existing as well as future water scenario. Considering the availability of surface as well as groundwater in the sub basin, discussions with the users and stakeholders are resorted to. The dialogue is taking place with initiative of Sinchan Sahayog and with participation of federation of WUAs', Irrigation Department, Water Supply Department and others.

As federation of WUAs has representatives from all over the district, the possibility of reducing the excessive consumption of water for irrigation, meeting out water requirement of Akola town from Morna sub-basin are also discussed. The issue of saving water by using water optimally, adoption of water efficient technology and adding the existing one by water conservation and rain water harvesting, recycling of waste water etc. are also discussed.

Last year there was 27% and this year, there is no live storage (dead storage of 3Mm³) in Katepurna project which has restricted its use to water supply only. Thus the need for proper sharing and efficient use of water has assumed more importance than ever. The discussions are going on with open mind and in fair manner. Rational thoughts will be given to present and future water use pattern and due consideration for saline belt in the basin. A plan for sub-basin will be prepared taking into consideration availability, requirement, restrictions and limitations.

The PIM in Katepurna project irrigation management has paved the way to participatory approach in management of water resources of Katepurna sub-basin.

CONCLUSION

Katepurna irrigation project is a representative scheme from Western Vidharbha where in there is under utilisation of irrigation potential. With PIM approach, it has resulted into not only complete utilisation of irrigation potential, but also farmers coming forward for allocating more water for irrigation purpose. The beauty of this case is that where farmers were reluctant to use water for irrigation, have now come forward strongly to demand more water by de-reserving exorbitant reservation for non-irrigation. Farmers and non-irrigation users have found out amicable solution with proper dialogue. The farmers have expressed their indebtedness to project by celebrating novel function of silver jubilee of the project.

With increased benefits to farmers in command area which is mostly in Purna sub-basin, farmers in Katepurna sub-basin and that too immediately downstream of dam agitating for irrigation facility saying that they are real stakeholder of water resources of Katepurna. Sinchan Sahyog a non-government organisation has come forward to bring all users and stakeholder on one platform to negotiate the process. The dialogue is in progress, a complete plan considering adoption of water efficient technology and adding the existing one by water conservation and rain water harvesting, recycling of waste water etc, will be prepared with users participation to share the water resources of the Katepurna sub-basin.

Table 1. Formation of WUAs in command area of Katepurna project.

| Sr. No. | Year | No. of WUA formed | WUAs registered under Co-op. Act | Total area covered under WUAs (I.C.A. in ha.) | No. of beneficiaries | WUAs actual working |
|---------|------------|-------------------|----------------------------------|---|----------------------|---------------------|
| 1 | Up to 1998 | 4 | 3 | 1192 | 620 | 1 |
| 2 | 1999 | 2 | 1 | 0263 | 109 | -- |
| 3 | 2000 | 4 | 3 | 1093 | 515 | 3 |
| 4 | 2001 | 10 | 7 | 2892 | 1247 | 4 |
| 5 | 2001 | 4 | 10 | 2425 | 921 | 10 |
| 5 | 2003 | - | - | - | - | 5 |
| Total | | 24 | 24 | 7865 | 3412 | 23 |

Table 2. Comparison of assessment of water charges by volumetric method and crop area method in Rupees

| Sr. No. | Name of minor | 1999-00 | | 2000-01 | | 2001-02 | | 2002-03 | |
|---------|---------------------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|
| | | Volumetric | Crop area | Volumetric | Crop area | Volumetric | Crop area | Volumetric | Crop area |
| 1 | Borgaon minor no. 1 | 2102 | 3071 | 24471 | 27487 | 49477 | 53223 | 32890 | 55321 |
| 2 | Borgaon minor no. 2 | 13490 | 13503 | 69171 | 74774 | 76187 | 93324 | 58919 | 98785 |
| 3 | Dhatala minor | | | | | 36936 | 39014 | 31672 | 42532 |

Table 3. Year wise irrigation and water used in Katepurna Project

| Sr. No. | Year | Season wise irrigation in ha. | | | | Season wise water used for irrigation in Mm ³ | | | | Non irrigation water use Mm ³ | Max. storage in project Mm ³ | Water balance of the end of year (30June) Mm ³ |
|---------|-------|-------------------------------|------|-------------|-------|--|-------|-------------|-------|--|---|---|
| | | Kharip | Rabi | Hot-weather | Total | Kharip | Rabi | Hot-weather | Total | | | |
| 1. | 2. | 3. | 4 | 5. | 6. | 7. | 8. | 9. | 10. | 11. | 12. | 13. |
| 1 | 75-76 | 2 | 1485 | 2 | 1489 | 0 | 9 | 1 | 10 | 1.813 | 86.35 | 49.96 |
| 2 | 76-77 | 111 | 1745 | 267 | 2123 | 2.25 | 13.95 | 8.01 | 24.21 | 4.53 | 86.35 | 56.81 |
| 3 | 77-78 | 9 | 1213 | 289 | 1511 | 0.50 | 9.70 | 7.17 | 17.37 | 10.05 | 86.35 | 58.76 |
| 4 | 78-79 | 5 | 656 | 93 | 754 | 0.30 | 5.25 | 2.79 | 8.34 | 11.64 | 86.35 | 35.09 |
| 5 | 79-80 | 0 | 532 | 10 | 542 | 0 | 4.26 | 0.03 | 4.29 | 12.56 | 86.35 | 68.86 |
| 6 | 80-81 | 0 | 1209 | 9 | 1218 | 0 | 9.67 | 0.03 | 9.70 | 12.44 | 86.35 | 63.09 |
| 7 | 81-82 | 0 | 1624 | 40 | 1664 | 0 | 15.99 | 0.17 | 16.16 | 12.7 | 86.35 | 16.08 |
| 8 | 82-83 | 13 | 1677 | 347 | 2037 | 1.19 | 15.09 | 22.28 | 38.56 | 13.19 | 86.35 | 14.77 |
| 9 | 83-84 | 0 | 954 | 387 | 1341 | 0 | 13.65 | 27.07 | 40.72 | 13.3 | 86.35 | 29.40 |
| 10 | 84-85 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11.83 | 19.11 | 5.4 |
| 11 | 85-86 | 79 | 1515 | 355 | 2317 | 1-90 | 21.55 | 7.02 | 30.47 | 19.04 | 81.25 | 0.79 |
| 12 | 86-87 | 372 | 2936 | 1126 | 4434 | 4.76 | 38.05 | 25.03 | 67.84 | 16.82 | 79.50 | 13.22 |
| 13 | 87-88 | 175 | 3706 | 108 | 3989 | 5.00 | 30.00 | 1.00 | 36.00 | 23.73 | 62.34 | 11.94 |
| 14 | 88-89 | 0 | 1530 | 1313 | 2843 | 0 | 24.10 | 18.16 | 42.26 | 18.89 | 86.35 | 41.35 |
| 15 | 89-90 | 0 | 1150 | 764 | 1914 | 0 | 28.59 | 14.90 | 43.49 | 16.34 | 86.35 | 2.94 |
| 16 | 90-91 | 0 | 737 | 853 | 1765 | 0 | 11.43 | 17.99 | 29.42 | 13.8 | 86.35 | 14.5 |
| 17 | 91-92 | 2000 | 433 | 126 | 2559 | 10.77 | 1.39 | 4.00 | 16.16 | 17.42 | 41.50 | 16.05 |
| 18 | 92-93 | 0 | 999 | 1074 | 2073 | 0 | 22.08 | 22.41 | 44.49 | 14.98 | 86.35 | 6.27 |
| 19 | 93-94 | 0 | 1419 | 700 | 2119 | 0 | 20.66 | 20.85 | 41.51 | 14.345 | 78.78 | 28.88 |
| 20 | 94-95 | 0 | 2511 | 791 | 3309 | 0 | 30.27 | 14.54 | 44.81 | 15.71 | 86.35 | 17.22 |
| 21 | 95-96 | 70 | 1791 | 130 | 1991 | 0.50 | 12.71 | 2.47 | 15.68 | 17.51 | 34.34 | 1.09 |
| 22 | 96-97 | 0 | 1739 | 830 | 2569 | 0 | 14.83 | 16.50 | 31.33 | 16.88 | 84.89 | 22.99 |
| 23 | 97-98 | 142 | 1295 | 630 | 2067 | 0.47 | 9.18 | 13.05 | 22.70 | 17.055 | 59.27 | 22.63 |
| 24 | 98-99 | 0 | 1454 | 882 | 2336 | 0 | 10.17 | 21.53 | 31.70 | 18.88 | 81.99 | 43.90 |
| 25 | 99-00 | 0 | 2098 | 595 | 2693 | 0 | 15.33 | 13.29 | 28.82 | 19.087 | 86.35 | 31.12 |
| 26 | 00-01 | 1501 | 4081 | 358 | 5940 | 5.75 | 23.37 | 7.28 | 36.54 | 21.34 | 70.69 | 2.15 |
| 27 | 01-02 | 170 | 3258 | 470 | 3898 | 1.13 | 24.24 | 9.40 | 34.77 | 21.7 | 86.21 | 9.20 |
| 28 | 02-03 | 20 | 4335 | 493 | 4848 | 0.17 | 27.04 | 13.08 | 40.31 | 21.63 | 86.35 | 6.15 |

Table 4. Details of Non Irrigation Water Supply from Katepurna Project
(Figures in Mm³)

| Sr. No. | Year | Akola City Water Supply | 53 Village Water Supply | Murtizapur City Water Supply | Akola Sugar Factory | M.I.D.C. Akola | FisheryMahan | M.I.D.C. Murtizapur | Borgaon Manju Water Supply | Total | Remarks |
|------------------------------|-----------|-------------------------|-------------------------|------------------------------|---------------------|----------------|--------------|---------------------|----------------------------|--------|---------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 12 | 13 |
| 1 | 1975-76 | 0.003 | 0.45 | 0 | | | 1.36 | | | 1.813 | |
| 2 | 1976-77 | 0.25 | 0.82 | 0.2 | | | 3.26 | | | 4.53 | |
| 3 | 1977-78 | 5.59 | 0.84 | 0.36 | | | 3.26 | | | 10.05 | |
| 4 | 1978-79 | 7 | 0.89 | 0.49 | | | 3.26 | | | 11.64 | |
| 5 | 1979-80 | 7.94 | 0.86 | 0.47 | | 0.03 | 3.26 | | | 12.56 | |
| 6 | 1980-81 | 7.94 | 0.58 | 0.58 | | 0.08 | 3.26 | | | 12.44 | |
| 7 | 1981-82 | 7.94 | 0.79 | 0.59 | | 0.12 | 3.26 | | | 12.7 | |
| 8 | 1982-83 | 7.94 | 0.91 | 0.69 | | 0.39 | 3.26 | | | 13.19 | |
| 9 | 1983-84 | 7.94 | 1.06 | 0.72 | | 0.32 | 3.26 | | | 13.3 | |
| 10 | 1985-85 | 7.94 | 1.03 | 0.78 | | 0.44 | 1.64 | | | 11.83 | |
| 11 | 1985-86 | 12.16 | 2.51 | 0.57 | | 0.5 | 3.3 | | | 19.04 | |
| 12 | 1986-87 | 8.76 | 1.4 | 2.81 | | 0.54 | 3.31 | | | 16.82 | |
| 13 | 1987-88 | 8.72 | 1.46 | 9.78 | | 0.45 | 3.32 | | | 23.73 | |
| 14 | 1988-89 | 8.22 | 2.2 | 4.84 | | 0.32 | 3.31 | | | 18.89 | |
| 15 | 1989-90 | 7.8 | 2.2 | 2.78 | | 0.42 | 3.14 | | | 16.34 | |
| 16 | 1990-91 | 7.49 | 2.11 | 1.07 | | 0.27 | 2.86 | | | 13.8 | |
| 17 | 1991-92 | 7.62 | 3.45 | 2.66 | 0.05 | 0.32 | 3.32 | | | 17.42 | |
| 18 | 1992-93 | 8.41 | 2.13 | 1.1 | 0.01 | 0.37 | 2.96 | | | 14.98 | |
| 19 | 1993-94 | 8.08 | 2.22 | 1.09 | 0.005 | 0.48 | 2.47 | | | 14.345 | |
| 20 | 1994-95 | 8.94 | 2.23 | 1.08 | 0.16 | 0.52 | 2.78 | | | 15.71 | |
| 21 | 1995-96 | 10.13 | 2.53 | 1.43 | 0.04 | 0.55 | 2.83 | | | 17.51 | |
| 22 | 1996-97 | 10.28 | 2.63 | 1.08 | 0.03 | 0.58 | 2.28 | | | 16.88 | |
| 23 | 1997-98 | 10.08 | 2.53 | 1.03 | 0.015 | 0.66 | 2.74 | | | 17.055 | |
| 24 | 1998-99 | 11.96 | 2.43 | 0.94 | 0.2 | 0.59 | 2.76 | | | 18.88 | |
| 25 | 1999-2000 | 12.88 | 2.73 | 0.99 | 0.007 | 0.5 | 1.98 | | | 19.087 | |
| 26 | 2000-2001 | 13.18 | 2.58 | 2.96 | 0.56 | 0.62 | 1.44 | | | 21.34 | |
| 27 | 2001-02 | 13.23 | 2.53 | 3.31 | 0.22 | 0.61 | 1.80 | | | 21.7 | |
| 28 | 2002-03 | 14.9 | 2.4 | 1.68 | 0.14 | 0.6 | 1.91 | | | 21.63 | |
| Water Reservation | | 24.03 | 0.79 | 2.83 | 1.0 | 14.95 | 0 | 2.05 | 1.17 | 46.82 | |
| Revised reservation of water | | 24.03 | 0.79 | 2.83 | 0.50 | 2.00 | - | - | 1.17 | 31.32 | |

Table 5. Abstract of completed, on-going and future irrigation projects in Katepurna sub-basin

(Figures in Mm³)

| Sr. No. | District | Completed Project | Under Construction | Under Planning | Total Planned utilisation of water resources of sub basin. |
|----------------|-----------------|--------------------------|---------------------------|-----------------------|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1 | Akola | 113.01 | 0.629 | 88.274 | 201.91 |
| 2 | Washim | 11.559 | 8.692 | 2.297 | 22.55 |
| | Total | 124.569 | 9.321 | 90.571 | 224.46 |