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## PERFORMANCE EFFECTIVENESS OF JALANIDHI PROJECT

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Jalanidhi is a water resource management project implemented by the Government with the support of World Bank. The main objective of Jalanidhi is to assist the Government of Kerala to improve the quality of Rural Water Supply and Environmental Sanitation. The Government have also created an autonomous institution, viz, 'Kerala Rural Water Supply and Sanitation Agency (KRWSA)' to implement this project. The project expected to cover 3 lakh households, benefiting a population of more than 15 lakh from the selected Grama Panchayats. The first phase of jalanidhi seeks to cover 92 Grama Panchayats from the four districts of Thrissur, Palakkad, Malappuram and Kozhikode and 18 Grama Panchayats from the remaining nine districts, excluding Alappuzha. The areas were selected on the basis of water scarcity.

The present evaluation study was limited to 2 panchayats each from the 2 districts which are identified on the basis of intensity of the problem of water scarcity. The chart showing the districts and panchayats chosen for the present investigation is given below.

### SAMPLE AREA

| Sl.No | Districts      | Panchayats   |         |
|-------|----------------|--------------|---------|
|       |                | 1            | 2       |
| 1.    | Kottayam       | Kaduthuruthy | Kadanad |
| 2.    | Pathanamthitta | Konni        | Kodumon |

Using the general formula for calculating the sample size  $N/(1+N(0.05)^2)$ , 378 samples were selected from the total population of 6959 households. Depending on the size of the population 89 households from Kadanad, 125 from Kaduthuruthy, 80 from Kodumon and 84 from Konnipanchayat were selected on equi-proportionate basis.

### ACTIVITIES, PROGRESS AND ACHIEVEMENTS OF JALANIDHI

The NGOs and private sector consulting agencies are playing an important role in the implementation and management of various water supply schemes in Jalanidhi project. The NGOs which provide assistance in the selected panchayats are following:

#### NGO'S IN KOTTAYAM DISTRICT

| Grama Panchayats selected from Kottayam district | Name of Supporting Organisation                            |
|--------------------------------------------------|------------------------------------------------------------|
| Kadanad                                          | Evangelical Social Action Forum (ESAF), Mannuthy, Thrissur |
| Kaduthuruthy                                     | Ala Social Welfare Society (PSWS), Ala                     |

## NGO'S IN PATHANAMTHITTA DISTRICT

| GramaPanchayats selected from<br>Pathanamthitta district | Name of Supporting<br>Organisation               |
|----------------------------------------------------------|--------------------------------------------------|
| Kodumon                                                  | azhakulam Social Service<br>ociety (PASS), Adoor |
| Konni                                                    | odhana, Thiruvalla                               |

The details of the selected gramapanchayats are given below:

## BASIC STATISTICS OF SELECTED GRAMA PANCHAYATS FROM KOTTAYAM DISTRICT

| Sl.No | Items                                          | Kottayam |              |
|-------|------------------------------------------------|----------|--------------|
|       |                                                | Kadanad  | Kaduthuruthy |
| 1.    | No. of wards                                   | 11       | 16           |
| 2.    | Area in sq. Km                                 | 40       | 32.73        |
| 3.    | Total no. Of households                        | 3248     | 7372         |
| 4.    | Population                                     | 16265    | 33793        |
| 5.    | C Households                                   | 194      | 901          |
| 6.    | T Households                                   | 35       | 12           |
| 7.    | BPL Households                                 | 1420     | 3268         |
| 8.    | No. of households having adequate water supply | 1138     | 2263         |

It can be concluded from the above table that 2110 households in Kadanad panchayat and 5109 households in Kaduthuruthy panchayat are not having adequate water supply coverage.

## BASIC STATISTICS OF SELECTED GRAMA PANCHAYATS FROM PATHANAMTHITTA DISTRICT

| Sl.No | Items                   | Pathanamthitta |       |
|-------|-------------------------|----------------|-------|
|       |                         | Kodumon        | Konni |
| 1.    | No. of wards            | 14             | 15    |
| 2.    | Area in sq. Km          | 36.36          | 1.5   |
| 3.    | Total no. Of households | 7283           | 914   |
| 4.    | Population              | 28691          | 10609 |
| 5.    | C Households            | 1452           | 616   |
| 6.    | T Households            | 1              | 5     |
| 7.    | BPL Households          | 2254           | 700   |

|    |                                                |      |     |
|----|------------------------------------------------|------|-----|
| 8. | No. of households having adequate water supply | 3318 | 952 |
|----|------------------------------------------------|------|-----|

It can be concluded from the above table that 3965 households in

Kodumon panchayat and 1962 households in Konni Panchayat are not

having adequate water supply coverage.

## THE MAJOR OBSERVATIONS ABOUT THE WATERRESOURCE MASTER PLAN

| Sl. No. | Items                              | Kottayam Dt.               |                            | Pathanamthitta Dt.         |                            |
|---------|------------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
|         |                                    | Kadanad                    | Kaduthuruthy               | Kodumon                    | Konni                      |
| 1       | Ground water status                | Safe                       | Safe                       | Safe                       | Safe                       |
| 2       | Water table fluctuation            | Falling – Below 10 cm/year | Falling – Below 10 cm/year | Falling – Below 10 cm/year | Falling – Below 10 cm/year |
| 3       | Whether seriously drought affected | No                         | No                         | No                         | No                         |
| 4       | Water Quality                      | No Serious Problem         | No Serious Problem         | No Serious Problem         | No Serious Problem         |

This table tries to show the status of water availability and quality in selected panchayats before the jalandhi implementation period. In all the selected areas, ground water status was safe even before the implementation of jalandhi project. Water table fluctuation was a common phenomenon and it was usually falling below 10 cm/year. No serious drought was reported in the 4 GPs selected before the implementation period of jalandhi project. Any serious issue regarding the quality of water had not been reported in the pre-implementation period.

### G W R MEASURES PROPOSED

#### 1. Kadanad

- Rain pits for the overflowing water from 1134 RWH units
- Recharge through abandoned open well

#### 2. Kaduthuruthy

- Recharge through 330 open wells using RWH methods
- Channel weir and diversion channels
- Catch water drains and vegetative hedges
- Contour bunds and catch pits

#### 3. Konni

- Recharge through abandoned open well
- Rain pits for overflowing water from 377 RWH units
- Check dam near Achankovilar

## 4. Kodumon

- Recharge through abandoned open well
- Contour bunds
- Biological fences

**FORMATION OF BENEFICIARY GROUPS IN KOTTAYAM AND PATHANAMTHITTA DISTRICTS.**

| Sl.No | Details                | Kottayam |              | Pathanamthitta |         | Total |
|-------|------------------------|----------|--------------|----------------|---------|-------|
|       |                        | Kadanad  | Kaduthuruthy | Konni          | Kodumon |       |
| 1.    | No. of clusters formed | 152      | 137          | 78             | 35      | 402   |
| 2.    | No. of BGs             | 57       | 61           | 48             | 35      | 201   |
| 3.    | No. of SC BGs          | 0        | 8            | 1              | 22      | 31    |
| 4.    | No. of ST BGs          | 0        | 0            | 0              | 0       | 0     |

Details of beneficiary groups were collected for analyzing their status. 152 clusters and 137 clusters were formed in Kadanad and Kaduthuruthi respectively in Kottayam district. 78 clusters and 35 clusters were formed in Konni and Kodumon respectively in Pathanamthitta district. Number of Beneficiary groups formed in Kadanad, Kaduthuruthi, Konni and Kodumon were 57, 61, 48 and 35 respectively. Number of SC beneficiary groups formed in Kadanad, Kaduthuruthi, Konni and Kodumon were 0, 8, 1 and 22 respectively. There were no ST beneficiary groups in both districts.

**Trainings Conducted**

| Sl.No | Type of Training     | Kottayam |              | Pathanamthitta |       |
|-------|----------------------|----------|--------------|----------------|-------|
|       |                      | Kadanad  | Kaduthuruthy | Kodumon        | Konni |
| 1.    | Orientation          | 12       | 32           | 4              | 48    |
| 2.    | Management oriented  | 4        | 5            | -              | 7     |
| 3.    | Skill Development    | 10       | 13           | -              | 10    |
| 4.    | SHP                  | 7        | 42           | -              | 50    |
| 5.    | Training to SO staff | 6        | 41           | -              | 10    |

Number of orientation training that were conducted in Kadanad, Kaduthuruthi, Kodumon and Konni were 12, 32, 4 and 48 respectively. Management oriented training that were conducted in Kadanad, Kaduthuruthi, Kodumon and Konni were 4, 5, 0 and 7 respectively. 10, 13, 0 and 10 Skill development programmes were conducted in Kadanad, Kaduthuruthi, Kodumon and Konni respectively. 7, 42, 0 and 50 Self Help Group training programmes were conducted in Kadanad, Kaduthuruthi, Kodumon and Konni respectively. Number of SO staff training that was conducted in Kadanad, Kaduthuruthi, Kodumon and Konni were 6, 41, 0 and 10 respectively.

**PROJECT STATUS****New Water Supply Scheme**

| Sl No. | Details                | Kottayam |              | Pathanamthitta |       | Total |
|--------|------------------------|----------|--------------|----------------|-------|-------|
|        |                        | Kadanad  | Kaduthuruthy | Kodumon        | Konni |       |
| 1      | Total No of active BGs | 57       | 61           | 35             | 48    | 201   |
| 2      | No. of WSS proposed    | 57       | 61           | 35             | 42    | 195   |
| 3      | No. of pumping WSS     | 11       | 44           | 35             | 19    | 109   |
| 4      | No. of RWH scheme      | 46       | 17           | 0              | 23    | 86    |

Number of Water Supply Schemes that were implemented in Kadanad, Kaduthuruthi, Konni and Kodumon were 57,61, 42 and 35 respectively. Number of pumping Schemes that were implemented in Kadanad, Kaduthuruthi, Konni and Kodumon were 11,44,19 and 35 respectively. Number of Rain Water Harvesting Schemes that were implemented in Kadanad, Kaduthuruthi, Konni and Kodumon were 46, 17, 23 and 0 respectively. In total , there were 402 clusters, 201 beneficiary groups, 31 SC beneficiary groups, 0 ST beneficiary groups, 195 water supply schemes 109 pumping schemes and 86 rain water harvesting schemes together for Kottayam and Pathanamthitta districts.

**2. Pumping Water Supply Scheme**

| Sl No. | Details                                 | Kottayam |              | Pathanamthitta District |       |
|--------|-----------------------------------------|----------|--------------|-------------------------|-------|
|        |                                         | Kadanad  | Kaduthuruthy | Kodumon                 | Konni |
| 1      | No. of New piped WSS proposed           | 11       | 44           | 35                      | 19    |
| 2      | No. of sources finalised                | 11       | 44           | 21                      | 19    |
| 3      | No. of Hydrogeological survey completed | 11       | 44           | 21                      | 19    |
| 4      | No. of Engineering survey completed     | 7        | 27           | 4                       | 12    |
| 5      | No. of source development started       | 2        | 8            | 12                      | 15    |
| 6      | No. of DSR approved                     | 2        | 0            | 0                       | 1     |

Number of new piped water supply schemes proposed in Kadanad, Kaduthuruthi, Kodumon and Konni were 11, 44, 35 and 19 respectively. Number of sources finalised in Kadanad, Kaduthuruthi, Kodumon and Konni were 11, 44, 21 and 19 respectively. 11, 44, 21 and 19 hydrological surveys were conducted in Kadanad, Kaduthuruthi, Kodumon and Konni respectively. 7, 27, 4 and 12 Engineering surveys were completed in Kadanad, Kaduthuruthi, Kodumon and Konni respectively. Number of source development started in Kadanad, Kaduthuruthi, Kodumon and Konni were 2, 8, 12 and 15 respectively. 2, 0, 0 and 1 DSRs were approved in Kadanad, Kaduthuruthi, Kodumon and Konni respectively.

### 3. RWH Schemes

| SL. No. | Details                | Kottayam |              | Pathanamthitta |       |
|---------|------------------------|----------|--------------|----------------|-------|
|         |                        | Kadanad  | Kaduthuruthy | Kodumon        | Konni |
| 1       | Total no. of RWH BGs   | 46       | 17           | 0              | 23    |
| 2       | Total no. of RWH units | 1134     | 377          | 0              | 624   |
| 3       | No. of DSR approved    | 26       | 13           | 0              | 18    |
| 4       | No. of Units started   | 180      | 2            | 0              | 168   |
| 5       | No. of units completed | 160      | 2            | 0              | 112   |

Number of RWH BGs implemented in Kadanad, Kaduthuruthi, Kodumon and Konni were 46, 17, 0 and 23 respectively. Total number of RWH units finalised in Kadanad, Kaduthuruthi, Kodumon and Konni were 1134, 377, 0 and 624 respectively. 26, 13, 0 and 18 number of DSRs were approved in Kadanad, Kaduthuruthi, Kodumon and Konni respectively. 180, 2, 0 and 168 units of RWH were newly started in Kadanad, Kaduthuruthi, Kodumon and Konni respectively. Among the newly started units, 160, 2, 0 and 112 were completed respectively in Kadanad, Kaduthuruthi, Kodumon and Konni.

#### 4. KWA / GP Scheme

| Sl. No. | Details                                                        | Kottayam District |              | Pathanamthitta District |            |
|---------|----------------------------------------------------------------|-------------------|--------------|-------------------------|------------|
|         |                                                                | Kadanad           | Kaduthuruthy | Kodumon                 | Konni      |
| 1       | No. of KWA schemes                                             | 1                 | 0            | 0                       | 0          |
| 2       | No. of schemes taken over by GP                                | 1                 | 0            | 0                       | 0          |
| 3       | Whether fully functional/ partially functioned/ not functional | Not functional    | 0            | 0                       | 0          |
| 4       | No. of schemes whether rehabilitation required                 | No                | 0            | 0                       | 0          |
| 5       | Whether rehabilitation TMCs formed                             | No                | 0            | 0                       | 0          |
| 6       | No. of schemes whether PFR prepared                            | No                | 0            | 0                       | 0          |
| 7       | Whether CAP prepared                                           | No                | 0            | 0                       | 0          |
| 8       | No. of GP schemes                                              | 14                | 0            | 0                       | 1          |
| 9       | Whether fully functional/ partially functioned/ not functional | Functional        | 0            | 0                       | Functional |
| 10      | No. of schemes whether rehabilitation required                 | 4                 | 0            | 0                       | 1          |
| 11      | Whether rehabilitation TMCs formed                             | Yes               | No           | No                      | Yes        |
| 12      | Whether CAP prepared                                           | 1                 | 0            | 0                       | 0          |

Number of KWA schemes proposed in Kadanad was 1. No KWA schemes were implanted in Kaduthuruthi, Kodumon and Konni. The implemented KWA scheme in Kadanad was taken over by GP later. But now it is a non-functional scheme. With regard to the scheme, no rehabilitation required, no rehabilitation TMCs formed, no PFR prepared and No CAP prepared. Number of GP schemes proposed in Kadanad was 14. No GP schemes were implemented in Kaduthuruthi, and Kodumon. Number of GP schemes proposed in Konni was 1. All the implemented GP Schemes are functional. With regard to the schemes implemented in Kadanad, number of rehabilitation required schemes are 4, rehabilitation TMCs are formed and for 1 scheme CAP is prepared. With regard to the schemes implemented in Konni, number of rehabilitation required scheme is 1, rehabilitation TMCs are formed and no CAP is prepared.

#### Institutional Sanitation

| Sl. No. | Details                                                  | Kottayam District |              | Pathanamthitta District |              |
|---------|----------------------------------------------------------|-------------------|--------------|-------------------------|--------------|
|         |                                                          | Kadanad           | Kaduthuruthy | Kodumon                 | Konni        |
| 1       | No. of Schools (Govt/Aided/Private)                      | 11<br>2/8/1       | 18<br>7/8/3  | 16<br>8/4/4             | 22<br>6/10/6 |
| 2       | No. of schools in which sanitation facility required     | 2                 | 2            | 5                       | 3            |
| 3       | No. of schools requiring water supply schemes            | 4                 | 2            | 1                       | 0            |
| 4       | Total No. of Anganwadies                                 | 18                | 30           | 19                      | 35           |
| 5       | No. of Anganwadies in which sanitation facility required | 0                 | 0            | 0                       | 6            |
| 7       | Whether CAP prepared                                     | Yes               | No           | No                      | Yes          |

There are 11 schools (2 Government, 8 aided and 1 private) in Kadanad. Among the schools only 2 schools required sanitation facility. Number of schools requiring water supply schemes are 4. Total number of Anganwadies is 18. No anganwadi requires sanitation facility. CAP is prepared. There are 18 schools (7 Government, 8 aided and 3 private) in Kaduthuruthi. Among the schools only 2 schools required sanitation facility. Number of schools requiring water supply schemes are 2. Total numbers of Anganwadies



are 30. No anganwadi requires sanitation facility. CAP is not prepared. There are 16 schools (8 Government, 4 aided and 4 private) in Kodumon. Among the schools 5 schools required sanitation facility. Only 1 school requires water supply schemes.. Total numbers of Anganwadies are 19. No anganwadi requires sanitation facility. CAP is not prepared. There are 22 schools (6 Government, 10 aided and 6 private) in Konni. Among the schools only 3 schools required sanitation facility. No school requires water supply schemes are 4. Total numbers of Anganwadies are 35. 6 anganwadies require sanitation facility. CAP is prepared.

## 6. HOUSEHOLD SANITATION

| No. | Name of GP                                       | Kottayam |              | Pathanamthitta |       |
|-----|--------------------------------------------------|----------|--------------|----------------|-------|
|     |                                                  | Kadanad  | Kaduthuruthy | Kodumon        | Konni |
| 1   | <b>Total No. of Households</b>                   | 3248     | 7372         | 7283           | 6914  |
| 2   | <b>Total No. of Households having no latrine</b> | 419      | 315          | 472            | 697   |
| 3   | <b>No. of un sanitary latrine</b>                | 15       | 116          | 944            | 3629  |
| 4   | <b>No. of sanitary latrine</b>                   | 2868     | 6941         | 110            | 2588  |
| 5   | <b>Total no. of new latrine proposed</b>         | 190      | 175          | 100            | 292   |
| 6   | <b>Total no. of conversion latrine proposed</b>  | 10       | 200          | 120            | 20    |
| 7   | <b>No. of Latrine constructed</b>                | 10       | 4            | 0              | 52    |
| 8   | <b>No-of-EMP units proposed</b>                  | 500      | 1036         | 250            | 190   |
| 9   | <b>No-of-EMP units implemented</b>               | 0        | 0            | 0              | 0     |

Total number of households in Kadanad, Kaduthuruthi, Kodumon and Konni are 3248, 7372, 7283 and 6914 respectively. Total number of household having no latrine facility in Kadanad, Kaduthuruthi, Kodumon and Konni were 419, 315, 472 and 697 respectively. 15, 116, 944 and 3629 number of unsanitary latrines are there in Kadanad, Kaduthuruthi, Kodumon and Konni respectively. 2868, 6941, 110 and 2588 number of sanitary latrines are there in Kadanad, Kaduthuruthi, Kodumon and Konni respectively. 190, 175, 100 and 292 latrines are newly proposed in Kadanad, Kaduthuruthi, Kodumon and Konni respectively. Total number of conversion latrines proposed in Kadanad, Kaduthuruthi, Kodumon and Konni are 10, 200, 120 and 20 respectively. Number of latrines constructed in Kadanad, Kaduthuruthi, Kodumon and Konni were 10, 4, 0 and 52 respectively. Number of EMP units proposed in Kadanad, Kaduthuruthi, Kodumon and Konni were 500, 1036, 250 and 190 respectively. None of them were implemented.

## PANCHAYAT WISE COMPLETION OF WSS

### Kadanad GP

| No. of Water Supply Scheme |                 |            |              |            |       |
|----------------------------|-----------------|------------|--------------|------------|-------|
| Pumping Scheme             |                 |            |              | RWH Scheme | Total |
| Total Source               | Existing Source | New Source | Total Scheme |            |       |
| 10                         | 6               | 4          | 11           | 46 (1135)  | 57    |

This table explains about the number of water supply schemes in Kadanad Panchayath in Kottayam district. With regard to pumping scheme, there exists 11 pumping schemes. With the 6 existing sources, 4 new sources are added. Hence 10 sources are active in Kadanad. Number of RWHs are 1135 in Kadanad.



## 2. Kaduthuruthy GP

| No. of Water Supply Scheme |                 |            |              |            |       |
|----------------------------|-----------------|------------|--------------|------------|-------|
| Pumping Scheme             |                 |            |              | RWH Scheme | Total |
| Total Source               | Existing Source | New Source | Total Scheme |            |       |
| 38                         | 1               | 34         | 44           | 17(377)    | 61    |

This table explains about the number of water supply schemes in Kaduthuruthy Panchayath in Kottayam district. With regard to pumping scheme, there exists 44 pumping schemes. With the 1 existing source, 34 new sources are added. Hence 35 sources are active in Kaduthuruthy. Number of RWH schemes are 377 in Kaduthuruthy.

## Kodumon GP

| No. of Water Supply Scheme |                 |            |              |            |       |
|----------------------------|-----------------|------------|--------------|------------|-------|
| Pumping Scheme             |                 |            |              | RWH Scheme | Total |
| Total Source               | Existing Source | New Source | Total Scheme |            |       |
| 35                         | 0               | 35         | 35           | 0          | 35    |

This table explains about the number of water supply schemes in Kodumon Panchayath in Pathanamthitta district. With regard to pumping scheme, there exists 35 pumping schemes. 35 new sources are started. Hence 35 sources are active in Kodumon. No RWH schemes are there in Kodumon.

## Konni GP

| No. of Water Supply Scheme |                 |            |              |            |       |
|----------------------------|-----------------|------------|--------------|------------|-------|
| Pumping Scheme             |                 |            |              | RWH Scheme | Total |
| Total Source               | Existing Source | New Source | Total Scheme |            |       |
| 19                         | 3               | 16         | 25           | 23(624)    | 48    |

This table explains about the number of water supply schemes in Konni Panchayath in Pathanamthitta district. With regard to pumping scheme, there exists 25 pumping schemes. With the existing 3 sources, 16 new sources are added. Hence 19 sources are active in Konni. Number of RWH schemes are 23 in Konni.

**JALANIDHI COVERAGE IN KOTTAYAM AND PATHANAMTHITTA DISTRICTS.**

| Sl.No | Items                                                  | Kottayam |              | Pathanamthitta |       |
|-------|--------------------------------------------------------|----------|--------------|----------------|-------|
|       |                                                        | Kadanad  | Kaduthuruthy | Kodumon        | Konni |
| 1.    | No. of Households havingadequate drinking water supply | 1138     | 2263         | 3318           | 4952  |
| 2.    | SC House holds having adequate drinking water          | 32       | 116          | 358            | 214   |
| 3.    | ST House holds having adequate drinking water          | 6        | 8            | 0              | 0     |
| 4.    | BPL House holds having adequate drinking water         | 298      | 683          | 748            | 994   |
| 5.    | No. of Households covered under Jalanidhi              | 1638     | 2310         | 1472           | 1539  |
| 6.    | % of coverage of eligible HHs                          | 77.63    | 66.60        | 37.12          | 78.44 |
| 7.    | No. of SC Households covered under Jalanidhi           | 60       | 352          | 655            | 78    |
| 8.    | % of coverage of eligible SC HHs                       | 37.04    | 44.84        | 59.87          | 21.89 |
| 9.    | No. of ST Households covered under Jalanidhi           | 9        | 4            | 0              | 2     |
| 10.   | % of coverage of eligible ST HHs                       | 31.03    | 100          | 0              | 40    |
| 11.   | No. of BPL Households covered under Jalanidhi          | 516      | 1349         | 830            | 527   |
| 12.   | % of coverage of eligible BPL HHs                      | 45.98    | 52.18        | 55.11          | 74.64 |

Among the 4 grama panchayats selected for the study, Kadanad had water supply coverage of 35% prior to the implementation of Jalanidhi and it was 31% in Kaduthuruthy, 46% in Kodumon and 72%in Konni. Implemetation of Jalanidhi has created an additional coverage of 50% in Kadanad, 31% in Kaduthuruthy, 20% in Kodumon and 21% in Konni. So the total water supply reached 62% to 93% in each panchayat after the implementation of Jalanidhi. The project strongly suggests that 16% of the beneficiaries should be from SC/ST communities. Beyond that seperate schemes are implemented underJalanidhi for ST community.

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