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एक मार्गदर्श वृत्त अध्ययन
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TABLE OF CONTENTS

PREFACE

Despite specialized targeted efforts of tribal development plight of tribals have not improved in proportion of the programmes and resources. The search for the appropriate tribal development on sustainable basis is therefore, a matter of interest as well as concern for all the stake holders of the tribal development.

The present paper is an attempt to document the experience of "Wadi" as an anchor of tribal development along with detailed analysis of the various dimensions of the development model including the potential of its replicability in other states of India.

I am extremely grateful to Dr. A.K. Bandyopadhyay, Chief General Manager at the Head Office of NABARD for proving me an opportunity for this study. I am thankful to Dr. T.N. Jha, General Manager, Dr. B.B. Sahoo, Asst. General Manager and Dr. Mohinder Kumar, AGM of NABARD for providing the useful comments and suggestions on the draft of my paper.

The other officials of NABARD; President of BAIF, Smt. Jyoti Desai, Programme Executive of BAIF Shri Tambe, Vice President of BAIF and Incharge of DHRUVA; Programme Executive Shri Kharecha at DHRUVA and Project Coordinator Shri Jayantibhai Mori along with all his cluster officers who have provided me great help in collection of necessary data, reports and studies as well as meaningful deliberations which has helped me a lot to develop my understanding.

I am indebted to our university and our Vice Chancellor for proving me all the encouragement and facilities to undertake such study.

I take the opportunity to record the liberal assistance provided by my research assistant Shri Calcuttawala Raxit and computer assistant by Shri Paresh Salve but for their assistance we find the present study at least in reasonably good shape and format.

Though I acknowledge the creditable contributions of all who have helped and took interest in the present study; however, needless to state that the short coming of the paper are entirely my own.

Dilip Shah

EXECUTIVE SUMMARY

1.1 The present paper is devoted to discuss the wadi (orchard) project as an instrument of the sustainable tribal development. The study mainly deals with the wadi based "Adivasi Development" aided by KfW, a development bank of Germany. NABARD is the Nodal agency on behalf of the Government of India and project executive agency is a sister agency (Volantary Organisation) of BAIF, DHRUVA. The Wadi based Comprehensive tribal development is the project implemented in three blocks of South Gujarat i.e. Dharampur, Kaprada and Vansada since 1995.

1.2 The Central focus of the present study is critical analysis of working of wadi as an anchor of the sustainable tribal development in the light of adequate theoretical conceptualization of relevant terms. It deals with historical origin and evolution of the wadi as development model for tribals. In order to appreciate performance and impact of the project which is already 6 years' long project, various dimension of the wadi is discussed at length. Critical assessment of the performance and impact analysis is conducted on the basis of the specific parameters and indicators. On the basis of critical review of the wadi based development experience. Strength and Weaknesses are pointed out objectively. In the light of the strength and weaknesses, the present status of wadi as replication model and its potential for future replication is dealt with important policy suggestions.

1.3 The Methodology of the study involves step by step study starting with preparation of exhaustive bibliographic index of literature. This literature survey provided relevant issues and hypothesis and database. The present study is primarily based on the secondary data sources. However, adequate benefits are drawn out of the base line studies and evaluation studies; adequate field visits and meetings with stake holders along with beneficiaries also helped us a lot in understanding the concept and process of the development through wadi development.

1.4 Tribal Development scenario prior to the wadi project was not at all satisfactorily measured from the point of any indicators of the development. This could be illustrated by the fact that

overall poverty recorded in this area was as high as 56% against the state average of 30% in 1982-83. Reputed study of IIM head documented even incidence of starvation and hunger also. It was mainly due to poor wage employment of hardly 160 days and despite the poverty induced migration for 60 days to 240 days by almost 95% of the tribals. The tribals could not meet their basic subsistence.

1.5 Evolution of major economic activity in the form of wadi was a story of the need based development project suggested by tribal beneficiaries and as a result, it was readily accepted by tribals with condition to refrain from alcohol and without temptation of any subsidy.

A careful combination of the government rural employment scheme (NREP) and Wadi Project helped developing a sustainable participation of beneficiaries who got adequate wage income for their work of wadi development. The unique combination of positive contribution of traditional culture of Wavli and demand for the seedling for mango plantation gave a new turn to the "wadi with women" project. The technical devices and capacity building along with modern management of plantation ensured very high success ratio of survival of plants. Timely planned scheme of providing institutional facility of processing of mango gave a great turn to wadi project to achieve unique success.

1.6 The analysis of the progress of the project discussed in term of the financial parameters as well as physical indicators based on the secondary sources provides a satisfactory performance. We may summarise the main points of impressive performance.

a) The project management and financial fund utilization has been done in such an efficient manner that with less than estimated costs more households are covered under the project within the same budgetary provision i.e. 13000 units are covered out of the grant of Rs. 10000 per unit and average cost of the wadi managed at the level of less than Rs.19000 against estimated cost of Rs. 20000 to 22000.

b) Overall fund utilization of around 74% of the budget is also quite satisfactory.

c) Physical performance in terms of the coverage of the villages and beneficiaries has exceeded the project targets.

d) Wadi plantation has been so well managed that overall survival rate of 85% is achieved covering on an average all clusters.

e) The production and processing performance has recorded remarkable continuous growth.

f) Soil conservation and water conservation development works have also picked up well in the 2003-2004 i.e. 80% utilization of the funds and 84% of the physical work coverage recorded of soil conservation work have been done well with credit provision for water resource development work has been started but utilization of that special funds is still less than satisfactory i.e. 30%.

g) Community health programmes have already picked up in 157 villages with almost 99% fund utilization with major physical achievement.

h) Women development through self help group has covered 73% of Kaparada-Dharampur but in Vansada and Dangs work is less satisfactory. Economic activities have taken up well but real non-farm economic activities are yet to emerge.

i) Peoples' organization through the grassroot or sanitation has taken up in the sense that as much as 188 villages and 2329 participants are covered by Ayojana Samiti.

j) Decentralized co-operative processing units are doing well as the quantum of processing. Landless labour employment and turn over has increased in case of all the 7 units.

k) Six different types of training covering large number of beneficiaries women, self help groups and landless have shown the continuous interest and hence, gained by the programme. The utilization of the skill development are found in the economic activities followed by the beneficiaries i.e. mango grafting, wormy compost, etc.

l) Credit for livelihood programme is a key for the sustainable development of the tribals even after the end of the project. "Sahbhagi Vikas Yojana" has been well established in its management and structure and familiar among tribal beneficiaries but the credit disbursement is still yet to take momentum as even 22% fund allotted for credit is not utilized. Review of interest charging on the loan may help in the further along with better initiative of opening new viable non-farm micro-economic activities suitable to present economic environment.

m) Finally, overall scenario emerging from the analysis is very clear and positive; with appropriate measures. Some shortfalls in financial and physical targets will be easily possible to overcome as the overall performance is quite sound, sustainable and in accordance to programme preparation plan.

1.7 Impact assessment of the project is indicative as the project is yet to be completed. However, we have attempted to analyze the economic and social impact in terms of the specific parameters. Each one of them are summarized bellow:

1. Livelihood impact:

- Livelihood related impact measured in terms of income generation shows overall annual income per household has remained close to Rs. 11000. On and average, middle class/large farmers have average income above Rs. 13000.

- However, our estimated wadi income is not very significant as an estimated wadi income is only Rs. 1113 per beneficiary household and the range of variation is in between zero (Jirval) to Rs. 2737 (Dixal) in 2002-03.

2. Agricultural development including animal husbandry:-

- Agricultural development related data shows very peculiar situation. There is no substantial improvement of cropping pattern as well as crop yields but at the same time there are significant evidences indicating changes in the process of modernisation of agriculture

as well as uses of marketed inputs as reflected in the users of marketed inputs as well as cost structure of tribal farms.

- Live stock composition shows very insignificant percent of the milch animals (10% to 15%) indicating almost no importance of dairy income in the income sources of tribals.

3. Migration:-

- The poverty induced migration show that migrating tribals have remained around 13% to 14% but number of days of migration have gone up i.e. 81-87 days and at the same time migration income is much less as compared to increased intensity of migration.

4. Wadi related impact:-

- Most of the beneficiaries (75%) regarded NGO itself as the source of information of wadi project. Role of information media was just 5%.

- The quality of land for wadi was poor in the sense that 81% wadi had "un-irrigated land".

- Hardly 5% beneficiaries could expand wadi after joining it.

- 98% to 99% beneficiaries said to have received financial/input support of the project in wadi development.

- 77% producers had undergone one or other type of capacity building training programme.

- 66% said to have utilised the training in the practice but almost 1/3 beneficiaries expressed their inability to use training.

- Training is reflected in the fast adoption of the soil and water conservation practices. It is quite remarkable that in our sample 96% farmers had taken up soil conservation measures bund construction is followed by 86% beneficiaries. Similarly, 69% to 70% respondents

have followed the water harvesting techniques including nala plugging; well repairs and development of jalkunds (farm ponds), etc.

- The systematic 'Wadi' development with best use of scientific approach and actions show almost 85% survival rate of wadi plants and 93% in case of Kaju and 86% in case of mango having almost much less variation by clusters.

- The marketed surplus recorded by our beneficiaries is 87.55% in case of mango and 95.15% in case of cashew nuts.

- Employment and income benefits during the process of wadi development was also found remarkable as on an average 42 days of work Rs. 1543 wage made available to wadi farmers to work on their own farms.

5. Quality of life:-

Almost 8 variables are introduced to judge the impact on quality of life and the overall scenario was quite positive. We may highlight the main findings as follow:

- Starvation has gone forever, substantial food with the better food items ensured 'food security' after wadi development.

- Consumption basket of the beneficiaries have improved with greater quantum of quality items of non-food consumption indicating definite change in the standards of life.

- Assessment of better quality living sources and equipments did not find much rise in fact except radio (36%); wall clock (31%) and cycle (28%) nothing significant to record in the urban life oriented equipments access to beneficiaries.

- 71% of the beneficiaries had only 'Katcha' house and hardly 2.46% and 7% had toilets and bathroom separately. However, 70% had separate kitchen and separate drinking water facility and 76% houses had separate cattle shed while 60% reported to have electricity.

- It is a matter of great satisfaction that primary data source of quality drinking water was available to 92% respondents that 50% received chlorinated water though 42% had to walk for water for over 1 to 3 km.

- Health - family planning related impact was quite positive, as 93% have started to receive some health service and guidance due to these project and health guides. 94% had vaccine yet 83% delivery is recorded at home but trained Dayan - village maid by DHRUVA health guides. 95% reported to have only casual sickness, skin disease was only reported by 2% but 10% reported anemia. 93% sample households asserted positive medical assistance by DHRUVA and the project. As much as 70% have followed family planning.

6. Environmental impact:-

Our sample study had not much direct evidences but we have other evidences to record the positive environmental impact due to the soil and water conservation measures; forestry plantation; availability of fodder and fuel from wadi and consequent reduction in dependence on forest sources; better cooking stoves adopted by sample respondents also helped to reduce forest depletion.

7. Women development with specific reference to gender issues:-

- It was surprising in our sample survey response that 56% women said to have become member of SHGs. Though participation of marginal farmers had 60% coverage.

- In our earlier study this was only 20%

- 48% benefited by loan at the lower rate of interest

- However, only 13% women felt that women unity has increased due to SHGs

- Gender issues were examined in our study it was interesting to find that:

(a) 78% women expressed that they have a voice in economic affairs of the family.

(b) 95% women had asserted about their positive assertation; though 46% had casual participation in decision making in the use of their income.

(c) However, 60% women have yet to receive the support of their family in their self-growth.

(d) 90% women accepted that their in-law do take care of their children while they go for work. The facility of Anganwadi for their children is just 3% to 4%.

(e) 80% women have stated having interest in assisting their children in their education which is a positive sign of acceptance of education.

(f) The remarkable change in the women life was so observed that as much as 90% to 98% denied any discrimination in food consumption both in terms of quality and quantity.

(g) Thanks to economic independence due to wadi income generating activities for women that 'women-beating' is almost over. 88% denied beating by husbands, non-consumption of alcohol and relatively better life has also played it role in elimination of this tribal peculiarity.

1.8 The 'Wadi' as sustainable development model has proved its basic worth by achieving the objectives of sustainable livelihood along with environmental development leading to sustainable development. The 'Wadi' model has proved that a committed professional management oriented NGO could become successful to idealize the poor, depressed, oppressed and dependent tribals through mutual co-operation, collective efforts and confidence building by experiencing the success. However, the replication of the Wadi is more an opportunity than challenge due to the path already carved by BAIF after long experience of experiments and failures in last three decades in developing 'Wadi' model. The prescribed recommendations based on our study could be helpful to accelerate the process of replication of wadi model in other

areas by NGOs as well as government development agencies like Tribal Sub-Plan and District Rural Development Agency.

1.9 Wadi based Adivasi Development has been doing well. Our impression based on study is that there is a scope for better performance and quick achievement as well as shaping better model for the tribal development. On the premises of such a positive outlook, identification of areas of concern; excellence and areas of new initiatives in developing most viable model of sustainable tribal development. In the context of each of this area, we have made some policy suggestions with the hope that at least some of them will be found useful.

CHAPTER – 1

SUSTAINABLE TRIBAL DEVELOPMENT RIDDLES AND REMEDIES

1.1 Introduction

This chapter is basically essential theoretical underpinnings of the relevant concepts and core issues of tribal development along with very sketchy account of remedial approach and programmes implemented by the state. This chapter provides a foundation of our study in order to understand our theme this chapter could be a considered as theme building foundation.

Development is a simple word having very complex meaning and implication as it is very subjective and value loaded concept. It is multi dimensional concept covering economic, social, political and moral facts. However, "Development' would be conceptualized as a set or vector of desirable social objectives or a development index which does not decrease over time". (PEARCe.al. 1990) very broad parameters of development include economic growth, income equality; human development; political and economic freedom and equitable access to employment, welfare and resources.

Sustainable development as concept rests on two different kind of sustainability. Economic literature views sustainability in terms of long-term continuity and constancy of economic progress measured in terms of output, income and consumption. An ecologists views sustainability in sustenance of human populations and biodiversity connection in a given geographical area/region, endowed with limited natural resources (F.A.O. 1989)

The well-known definition of sustainable development perhaps most successful in reflecting above stated two different economic and ecological stability when it defines sustainable development as "Peoples' Development that meets the needs without compromising the ability of future generations to meet their own needs". (WCED, 1987:43). Katarsingh has exclusively analyzed the sustainable development in terms of specific indicators measuring "process sustainability" and 'output' sustainability (Katarsingh, 2002)

The World Bank in its report of 2003 on Sustainable development in dynamic world points out major inter related

DRIVERS of Socio-economic changes and transformation leading to SUSTAINABLE DEVELOPMENT. These drivers include **(a)** scientific and technological innovations **(b)** income growth **(c)** demographic transition and **(d)** urban transition (World Bank-2003). Though these drivers are related to World development, they are equally relevant to national, regional and even tribal development level.

Prior to discuss 'Sustainable Tribal Development' we may note that conceptualization of "tribe" itself needs to be clarified. 'Tribals' has many connotations ranging from Anthropological to social and political conceptualization (S.J. Phansalkar Shilp Verma – 2004). We may state that the constitution of India (Article 342) defines a tribe as "an endogenous group with ethnic identity, who have retained their cultural and traditional identity; they have a distinct language or dialect of their own; they are economically backward and live in speculation, governed by their own social norms and largely having self-contained economy" (Bijoy, 1993). And on this basis, tribal people are identified as being Scheduled Tribes. The schedule attached to Article 342 has thus listed out 600 Scheduled Tribes in India. For the operational purpose of tribal development and planning: The scheduled tribes also categories in terms of their level of development: Primitive Tribal Groups (PTG): Tribal in Transition and completely Assimilated Tribes. (S.J. Phansalkar and Verma – 2004)

The Sustainable Tribal Development is well expressed in terms of specific indicators provided by BAIF Development Research Foundation – A Development NGO. (D.V. Rangneker, G.C. Shani and B.K. Kakade, 2000). "Sustainable Development is an unanimous goal for all stakeholders of development but it is interpreted in diverge manner depending upon individuals; communities and regions. Therefore, to arrive at an operational concept of tribal development, "we may design and define specific indicators to achieve sustainable tribal development". Three sets of indicators related to ecological, economic and social dimension of tribal economy may differ depending upon approach to achieve sustainable development and the appropriate instruments of development. However, these indicators must be comprehensive based on basic baseline of social economic data acceptable to community. BAIF has developed a very systematic set of indicators with reference to "Live stock Programmes which was the initial foundation of integrated development of tribals.

The process of refinement in the conceptualization and indicators are further developed by BAIF through the partnership programmes with various international agencies such as international union for

conservation of nature (IUCN) which has a development project of natural resources and their management by local people in a sustainable manner. It is very interesting to note that “The BAROMETER OF SUSTAINABILITY” a tool of sustainable development based on specific score scale is developed by IUCN which combines the Indicators related to Human well being to gather with ecosystem wellbeing. An approach to assess towards sustainability tools and training series (IUCN -1997), this concept has been attempted to apply for assessment of wadi project (Mahajan S. Newak, M. Pendharker P.2000).

On the basic of the above dissentions, we may state our operational meaning of the “Sustainable tribal development”. The sustainable tribal development must ensure livelihood security, food security and environmental security, sustainable development process of participation of tribals with positive development motivated mind-set along with a development environment suitable for them to achieve sustainable tribal development. To what extent “WADI” based model of tribal development could achieve such ‘Sustainability’? We shall examine in the detail in our personal paper. However, it would be most relevant to review the major tribal development riddles and remedial efforts by the State Government as well as non-government organizations for appropriate contextual background of our study.

Gujarat State has 61.62 Lakhs tribal population constituting 14.92% of total population and have 12.32 Lakhs households. Gujarat tribal area falls in eastern are of Gujarat covering 11 districts out of 25 districts. i.e. Banaskantha, Sabarkantha, Panchmahal, Dahod, Surat, Vadodara, Bharuch, Narmada, Valsad and Dangs. 33 Taluka and 21 clusters are identified as most tribals. The Tribal area coverage is 14.31% almost equal to 14.82% tribal population, but compared to Schedule Caste. They all thinly spreaded in the sense that though proportion of schedule caste population is 7.50%. They are spreaded in all 25 districts and 182 taluka. Therefore, from the angle of the area development: tribal development seems to be more comfortable. There are 5854 villages having more than 50% population of S.T. Similarly, there are only six districts exceeding 25% tribals having maximum percentage of tribals in Dangs - 93.4%. There are 10.83 Lakh tribals i.e. 17.58% dispersed tribal distributed among 29 different primitive classified as tribals.

It may be stated that Gujarat is the Fifth state of India having almost double tribal population than percentage of tribals in all India population.

Tribals in Gujarat are having three sources of the livelihood. Forest; Agriculture and Migration. Forest contributes a source of sustenance and employment. Tribals sustain themselves by collection and consumption of forest produces. If surplus by sale of roots, non-timber forest produces as well as in forestry operations themselves. The second source is that of agriculture. Most tribals cultivate, on their own land lands; or the disputed forests lands to which they claim titles, rain fed crops or crop combination i.e. Paddy and minor cereals and pulses. After the monsoon, immigration in employments remains for the source of income to overcome the crucial gaps to restrict the subsistence needs of the tribals. Continuous Deforestation and increasing proportion of forests under government and productivity in the absence of non-farm jobs have created crises of livelihood in the tribal area.

The following table of major indicators provides the picture of overall socio-economic profile of tribals in Gujarat.

Major indicators of Tribal Profile

Sr. No.	Particular	Tribal Districts	Gujarat State
1	*Population Growth*	23.45	21.19
2	*Density of Population*	147	2112
3	*Sex Ratio*	990	919
4	*Infant Mortality*	82.78	71.45
5	*Literacy Ratio*	36.45	61.29
6	*Female Literacy Ratio*	24.20	36.45
7	*Net Irrigated Area as Percentage of Total Cultivable Area*	14.01	24.60
8	*People Below Poverty line*	7.45	19.75
9	*Average Land Holding*	2.51	3.16
10	*Percentage of Gross Irrigated Area to Gross Cultivated Area*	14.61	24.07
11	*Factory per One Lakh*	15	28
12	*Workers in Factories*	648	1579
13	*Percentage of Villages having Primary School*	96.1	95.6
14	*PHC/Sub Centre*	93.7	98.09
15	*Roads*	93.0	95.0
16	*Fair Price Shops*	29.7	40.5

Source: *Tribal Sub-plan of the State – 2002*

On the basis of the above stated table we may note that broadly**:**

- Tribal districts are more populated and less urbanized.
- Relative Growth rate of population is higher than state average.
- Effective literacy rate is lower in all counts.
- The average holding of the land is also relatively low.
- Some micro studies have shown the crop productivity much below state average and cropping pattern is almost narrow and traditional.
- Non-farm sector developed as indicated by the per lakh factory and workers in tribal areas is also low.
- Finally, 'amenities' are fast improving in the tribal areas but their quality and extant of utilization is less than desirable.

The present socio-economic backwardness of tribals in Gujarat is despite of the variety of the government plans and the programmes since 1961-62. Apart from the standard all India tribal development programmes such as follow:

a) Integrated Tribal Development Projects (ITDP) under Tribal Sub-Plan.

b) Modified Area Development Approach (MADA)

c) Cluster Approach for Development of Primitive Tribals

d) Nucleus budget

e) Special Component Plan

Gujarat has also implemented "New Gujarat Pattern" for the Tribal Sub-Plan. Since 1997, under which 17.57% of the state Annual development earmarked for the Tribal Sub-Plan and 80% outlay was earmarked for the schemes formulated and implemented by the state level agencies. Moreover, under the Gujarat Pattern at state level a planning board of tribals headed by chairmanship of Hon. Chief Minister of the state and at district level District Advisory Adivasi Vikas Mandal has been constituted for the formulation of

schemes; implementation and coordination at the district level. Recently, Taluka Tribal Development Committee has also been set up under the chairmanship of project Administrators of the I.T.D.P.

Gujarat since 1990-91 has made a provision of almost 10% of the state plan. It is reported that; "The state below for the TSP including the outlays for the TASP and dispersed tribal works are to be Rs.847 Crores which accounts for 17.15% of total state plan of Rs.7600.00 Crores during 2002-2003." (Government of Gujarat Tribal Sub-Plan including TASP – 2002) It is reported that an average utilization of fund ranged between 88.48% (1992), 99.35% (2002). Incidentally, we may note that the percentage of allocation of tribal development fall short of 4% if we compared with the 14% of tribals in Gujarat.

Despite these provisions as we have earlier recorded, plight of tribals has not made any substantial change, it is recorded by number of studies (Sanat Mehta-2000; Harnath Jagavat - 2000) etc. while Sanat Mehta quotes planning committee working Group report stating that despite about Rs.40000 Crores worth investment tribal sub-plan failed to impact positively (Sanat Mehta – 2000). "It is estimated by Jagavat that the success rate of 25% - 50% of any scheme of tribal development and investments would have made tremendous impact on lives of the tribals, even this much has not been achieved is the mockery of development" (Harnath Jagavat - 2000).

However, as balanced judgment of the performance, we may quote 10th plan. It puts the following performance note:

"Efforts made from the beginning of the planned era" (1951) through various developmental plans, policies, special strategies, and programme has registered a *definite quantifiable improvement in the socio-economic status of the tribals*. However, *the progress made by them could not bring them any where near to the main stream society as the gap in the socio-economic status continued to prevail, not only as a matter of prior concern, but also as a task to* accomplish during the 10th plan (Government of India 10th Plan, PP-452). These gaps are very persistent and widening in these major area **(1)** Education **(2)** Health and Economic Development (Government of India 10th Plan, PP-452). These all India observations are applicable to Gujarat without any qualification.

Riddles are identified and efforts are also made what exactly is need to be done is best possible to see in the NGO perception and actions for tribal development. We may discuss at least two major diagnostic analysis of two different prime NGOs in Gujarat (Sadguru Seva Sangh and BAIF).

The occupational structures of working population suggest that "Agricultural development" is a key to tribal development. The transformation of Agriculture involves revolutionary changes in productivity, fertility and efficiency along with remunerative cropping pattern. However, substantial transformation in Agriculture without assured water in poor irrigation area is impossible without surface water harvesting and ground water recharging related water management. Therefore, it deserves top priority, in the villages of Vansada as well as villages of Dahod. A successful intervention of this kind has reflection in radically reduced sessional migration from the level of 50.70% to 10% of tribal families (Jagavat - 2000 and Dilip Shah - 2004)

Forestry plantation and extended horticultural development including "Wadi" type project are having enormous potential of tribal development. Government has tried through the forest dept., schemes of tribal development with forestry (Dilip Shah - 2004). It is reported that 10 Lack hectors of the forest land in tribal regions. Area like Dangs has even 96% forest land. In some hilly regions even 40-50% of the total land worth forestry i.e. tree plantations. Until recently, Gujarat tribals had no land ownership. After the release of 50000 hectors of the forest land for the purpose of the land to tribals, Gujarat state had distributed 26000 hectors of land to 20000 households. 67000 families in 2002 additional 26822 hectors of land were further distributed among 20600 tribal holds (Aklavya - 2004). Thus, the cultivation ownership to 67000 families will help changing the life of tribals provided water resource development and forestry as well as programmes like "Wadi" and horticultural development are successfully implemented.

1.2 Concluding Observation

Our discussions of Tribal Development in Gujarat lead us to major and pertinent question, Could we have appropriate model of tribal development which really could address to the needs of tribal development and based on indigenous resources and traditional skills and culture of tribals? and with appropriate modern-technology we may substantially improve such an anchor in to

instrument of livelihood ? The “Wadi” based Sustainable Tribal Development initiated in South Gujarat known as Vansada model since 1982 has caught attention of the world as such “Model” of sustainable tribal model development. Our present paper is devoted to undertake analytical study of this very remarkable Tribal development model.

CHAPTER – 2

SCOPE AND METHODOLOGY

2.1 Introduction

This brief but important chapter clearly spells out the scope of our study and specific objectives of the study originating from the scope of our study. The analytical enquiry guided by the objectives are based on the research methodology carefully carved out so that the study could provide solid observations and findings which may be useful to all the stake holder of the Wadi based tribal development as well as the community of scholars, policy makers and others who have concerned for tribal development.

2.2 Subject-Matter

The subject matter of the present occasional paper under the series of publication of the occasional paper is indicated by NABARD i.e. "Sustainable Tribal Development Model-Case of Wadi". The recently recognisation of the 'wadi' model at international and national level has provicated wide interest among all those who concern with trial development with regard to Replication of this model for alleviation of Tribal poverty and backwardness.

2.3 Scope

The theme of tribal development and the alternatives of the development has very wide range of issues therefore, to focus on the analytical study on 'WADI – as Sustainable Model' we have to clearly define the scope of the subject matter in the specific and restrictive manner. The scope of the paper therefore, mutually decided between scholar and sponsoring agency as follow:-

A. Background study of the theoretical aspects of Development, Tribal development and sustainable development along with the related aspects

B. Critical review of tribal development and planning in Gujarat and pre-project scenario of tribal termoil and poverty in the project area

C. Origin and evolution of the model

D. Performance and impact of the 'Wadi based Project' with specific reference to financial aspects and food security.

E. Strength and Weaknesses of the model/Tribals households and it's replication with specific discussion on comparative efficiency of the Wadi Project vers integrated tribal development project (ITDP) in other areas.

2.4 Objectives of the study

On the basis of the 'scope' of our study, in order to design our study, we have spelt out the theme in terms of the following objectives and each of one theme is dealt with in proportion to its significance and feasibility of our study project.

1. Theoretical underpinnings to highlight the conceptualization and relevant terms and concepts related to present study.

2. Historical backdrop of the tribal situation prior to Wadi Project

3. Origin and Evolution of Wadi Project

4. Performance analysis of the Wadi project in Vansda and Dharampur-Kaprada area

5. Impact Analysis of the Wadi project with specific reference to livelihood security, Food Security and environmental security along with Important in quality of life.

6. Critical Assessment of the Strength and weaknesses of the 'Wadi' as an instrument of tribal development

7. Replication of the 'Wadi' project with specific reference to Credit based replication.

8. Policy Actions to strengthen the project and to eliminate weaknesses of the project with specific actions to achieve excellence in the project.

2.5 Methodology

The methodology of the study involves the step-by-step study. It was first required that we had to prepare the exhaustive Bibliographic Index to study the 'literature'. This literature survey

provided us the relevant material and issues for the analytical exercise of research. This preliminary exercise also became the foundation source of the data. As our present study is primarily based on the "SECONDARY DATA". The secondary data sources that we have used in our study covers wide range of published books to broachers and unpublished notes to technical reports: It covers official studies as well as non-official studies; published as well non-published. Papers including Video-graphic material, we have not spared any efforts to collect the all relevant sources of the data. We may also state that formal and informal discussions with executives of NABARD, BAIF and ground level workers including cluster officers also could be included in the secondary data inventory because the contribution of these sources in development of our understanding is significant.

We had an opportunity of understanding wides study of evaluation of the Wadi based tribal development and hence, some of the observations and findings based on the primary data are also related in relevant area of the discussion. In addition to that we have also used our findings based on our ongoing study on wadi project (Dilip Shah, Second Evaluation -2004). However, the basic burden of our study falls on the secondary – data sources.

The study is based on secondary sources of the data but we have worked out our scheme of performance analysis and impact analysis to highlight the specific dimensions of our interest of analysis. The details of each of these aspects will be discussed in relevant chapters.

2.6 Organization of Study

We have worked out the following schemes of chapterization of our research study reporting which include all major and minor objectives of the study. The chapters are as follow:

1. ***Sustainable Tribal Development: Ridles and Remedials***
2. ***Scope and Methodology***
3. ***Tribal Development scenario prior to Wadi project***
4. ***Evolution of Wadi an Anchor of Tribal Development***
5. ***Financial and Physical progress of 'Wadi' programme: A performance Analysis***

6. ***Impact assessment of Wadi project***
7. ***Strength-Weaknesses and Replication of the Wadi as Sustainable Development***
8. ***Suggested policy actions***

2.7 Limitations

The limitations of our study are required to consider in appreciation of our efforts in our present study. Since the study is based on secondary data sources are the limitations related to the uses of different secondary data sources are applicable to the present study. For example, concepts, interpretation and quality of data and its analysis are having differentiation to which we could not do any change or alternation. In other wards such material is used as “available” in whatever form and format etc. contradicting facts, we have tried to resolves but ‘bias’ could not be eliminated to that extent our study also suffers from the “objective” analysis. Limitations in using secondary data are also arising out of the difference of implementation, absence of cross verification of the data and facts drawn from other sources of the data. Finally, there are instances where Factual evidences are quoted from other studies but we had done interpretation of our owned for our purpose and this may create difference of opinions based on same facts. Finally to the extent of our inability to verify the validity of some factual data our analysis of the study also become could not FIRM enough to draw solid observations.

CHAPTER – 3

TRIBAL DEVELOPMENT SCENARIO TO WADI PROJECT

3.1 Introduction

The present chapter is designed with an objective to document Tribal development scenario prior to the Wadi Project Initiated in 1982 in Vansada. In view of the implementation of 'wadi' project as a "Adivasi Development" since 1995 in the major parts of Dharampur and Kaprada. The present chapter covers three areas i.e. Vansada, Dharampur and Kaprada. The present exercise of Tribal Development scenario prior to project has been attempted with an objective to provide an idea of the challenges in tribal development as well as to get appropriate contextual linkage with the 'wadi' type model of the development for the purpose of the convenience, the analysis of the available facts and data of these areas priors to 1985-86 are discussed in the fame work of socio-economic Parameters.

3.2 Location

Vansada, the original project area is in Navsari district. Earlier it was in Valsad district. The district was divided in to two zones. – The Talat and Dunger as per their topography. The area is dominated by Dunger where forest are 95.7% and cultivable waste was 93.2% and per capita cultivable land was 0.77 acres and 61.7% population belong to Dunger region all the land is subject to soil erosion.

Climate of the area is humid to sub humid. The normal seasonal cycle is such that the summer starts from month of March and extends up to middle of June. May is the hotest and lowest temperature is recorded 13^{o}C.

The project area falls under the high "rainfall zone" and it gets south - west monsoon on account of the uneven terrain and 1008 soil structure. The rate of runoff is very high. However, due to adverse ecological set backs mainly due to deforestation at the rate of 10% per annum even in this area also rainfall has declined to half from 1998 -3125mm to 1734 -2002. Since there are no means of water harvesting of surface water, despite the heavy rainfall land

remains unirrigated. Systematic irrigation is less than 10%. Though there are small rivers i.e. Auranga, Man, Tan, Par, Kolak, Damanganga and revulates. Exploitation of ground water, though available in substational measure is both difficult and costly. Being formed of basaltic rocks with trap rocks generally occurring 30-40 feet below ground level and hard, massive rocks further below irrigation through tube well is not viable (Vaibhav Bhamoriya -2004).

An earlier study depicting the drinking water scenario records that according to brief survey of 510 participates 75% of them were drinking unsafe water and 25% could get water from constructed but open well. The only 1% reported to have used hand pump or bore well (Bhatt-1987).

Demographically, the population of the Vansda taluka was 403912 in 1971 out of which 61.7% were residing in the Dunger Region. The area was almost 100% tribal in terms of tribal population as reported in earlier studies the most economically dominant people in the area were "PARSIs" engaged in the liquor business besides being landlords and money lender. Another economically forward caste family was Anavil brahmins (A sub cast of hindu brahman popularly called Desais) who were also land lords. This caste had reported to have done a lot of exploitation of tribals. However, the Parsis had left the area and community itself in declining.

Though the society of the area is dominated by one single type of the people i.e. 90% tribals. A homogenous and harmonious united society is expected but that is not the case due to the division of tribals society in various ethnic groups with horizontal layers. Vansda had ethnic groups of Dhodias; Kokna; Warli; Nayaka; Dubla; Koli; Kolcha and Borpi. Except Dholias or Dholia Patels, all are concentrated in Dunger region. Comparatively, Dholia (Patels) of fertile plains are regarded as more progressive; hardworking and relatively better off than others. 'Warli' and 'Kolcha' are much backward and poor among all ethnic groups as Warli are semi-nomadic and Kolcha who are associated with Dhor and their skin cutting and selling as they are not vegetation eating beat and carrion almost treated by other ethnic groups as untouchables and hence, their socio-economic condition is most precarious.

3.3 Occupational Pattern

Tribals' most dominant occupation was agriculture, which is subsistence, traditional and primitive and in fact originated and

expanded with the process of declining forest which was main source of livelihood. The major tribals are small and marginal farmers i.e. 80%. The production is mainly traditional food crops Deshi Paddy and Nagli and productivity is so less that they had mostly no surplus to sell in market and in fact, they were either net buyers of food against the wage labor. Apart from absence of water harvesting provisions; soil erosion and stony land and absence of any irrigation facility along with tiny unviable size of land, the question of incentives though land ownership is also an added dimension to poor farming. It is well known until recently. The tribals were not returned their customary rights including land ownership rights to tribals who were cultivating land since years land ownership in this area was very ambitions titles of many farmers are not clear. Forest areas found such cultivation as encroachment but also regularized the land cultivation. However, this process was never followed sincerely. This has also adversely affected whatever investment that tribals could have done in improving agricultural production.

The 'Koknas' of the Vansada in 1981 census had been documented as about 67% cultivators and 21% agricultural laborers and hardly 10% to 12% engaged in non-farm occupations. Similar is the activity pattern of 'Warlis' with marginal variations. 58% of Kolchas were primarily agricultural cultivators. However, most of them were marginal and small farmers about 37% were agri-wage laborers and even to supplement their income they were use to labour on other farms also.

Single most social development indicator and instrument of empowering poor for development is 'Literacy'. The tribal development studies conducted by experts of IIM during early period of 1981 very alarming facts of literacy level. According to primary survey of tribal areas tribal literacy was just 20% and tribal women literacy was 11% and thus the tribal poverty was half the level of state literacy in 1980-81 (Tribal Statistics - 1981, Shah R.J. - 1982, Gujarat Vidyapith - 1985). Another study was Vansada, provides details of literacy among different ethnic groups (Bhatt-1987). Accordingly overall illiteracy rate among Kolcha and Kotwadia was 91% others were having 58% while overall average tribal illiteracy rate was 67%. Literacy level data recorded that not a single family of Kolcha and Kotwadia were having reach to the level of grade beyond 9th standards and only 6% of the tribals had seen the doors of the collage; despite of the reservation and 100% subsidized education for tribals.

3.4 Poverty and Starvation

A couple reputed institutions have conducted detailed survey in this area and has documented the extend incidence of tribal poverty including even starvation. I.G. Patel committee report identified this Vansada taluka as one of the most backward taluka (I.G. Patel Committee). It had been reported that tribals could get hardly 160 days of employment with marginal wages and as a result, the tribals had to migrate for the wage employment for an average 160 days in the year.

An intensive field survey of Vansada area records more than 95% of the tribals were migrated out of their villages for between 60 days to 240 days in search of work period villages were found totally empty except old men and women and children left in the villages (Bhatt-1987).

It was reported that migration income in the form of wage was Rs. 3 to 6 per day as daily wage in Valsad district even in government construction work also the migrant tribals could not get more than 5 to 7 Rs. wages paid below the minimum wage (Bhatt-1987). Against this level of earning annual substance requirement of tribal were systematically estimated and that was the total per capita per day income required for 'Food' purchase was Rs. 4.85. Total per capita per day to meet subsistence as per standard norms of 2800K cal per person per day (P.P.R. Annexure, 1990).

It was further stated if we consider other basic requirements such as education, medical expenses; travel expenses; religious functions; cottons/shoes, fuel for cooking and lighting, miscellanies then, total per capita per annum income requirement per a family of 5 persons was estimated at Rs. 729. Thus, A poverty crossing income divided was drawn at Rs. 15000 per annum for a tribal family of 6 persons (2 + 4 children) i.e. Rs. 2500 per capita per year. Most of the tribals were nowhere close to this income level (PPR - 1993).

As a result, the tribals were victim of chronic poverty much heavier in terms of it's extend and incidence. The overall tribal poverty was recorded 56% against 30% of poverty in Gujarat as per NSS data of 1982: a study conducted by Tribal Research Centre in 1982 had recorded merely daily income of Rs. 0.92 Paise per capita among tribals. (Tribal Research Center, 1982) However, most vivid account of poverty had been given by IIM study in 1979 (Vyas and

others, 1980). A systematic survey of 1000 households conducted by Indian Institute of Management revealed that many tribals hit by starvation and hunger on an average as many as 18-24 days in the year reported as "hunger days".

The incidences of starvation varied with ownership of land holding size as shown in the following table:

Incidence of Starvation by Land Holding Categories:

Sr. No.	Landholding Category	Starvation (Households)	Skipped Meals (Households)
1	Landless	27.3%	79.5%
2	Up to 1.00 acre	38.2%	80.1%
3	1.01 to 2.50	28.4%	68.4%
4	2.51 to 5.00	18.4%	60.9%
5	5.01 to 10.00	11.8%	49.2%
6	10.01 to 15.00	8.4%	26.5%

Source *:- IIM Survey-1979*

A similar analysis of regional variations had shown that starvation was more pronounced in the Dunger region (Landless) 17days per year hunger days than in Talat 14 days of hunger per year regarded by tribal sample survey respondents.

3.5 Exploitation through money landing and Land Alienation

The exploitation of tribals due to their compelling indebtness on account of their shortage of livelihood income was wide spread. Almost all tribals had been victim of the exploitative practices of money landing of non-tribals. The local money lenders were used to charge having interest and following mal-practices in accounts etc. It was usually taking the form of people borrowing money from local leaders who were also employment providers with wage labour opportunities, when they migrate in search of work. Usually people returns from several months of undertaking of hard wage labour with negative savings. Most people pay back the amount borrowed and interest by note claiming the wages in the following years. This is infact 'Disguised Bondage labour'. There were events of land grabbing to compensate the debts. This process of alienation of tribals from the land under this practice of money lending was

socially open secret but legally unchallengeable due to practical device of land transfer in practice. Some earlier studies provide such evidence of exploitation process of money landing and land alienation (Project Preparation Report).

The fifth schedule of the Indian Constitution ensures that land holding to tribals cannot be sold to non-tribals, usually, it is impossible to keep a check on such transfer as they are often not even undertaken formally, occurring as they do, as a result of indebtness and subsequent bondage. In the state of Gujarat 22376 cases of land alienation had been filed in the court comprising 65544 acres in tribal areas. 19180 cases had been decided in the favor of schedule tribes and land actually restored to 54450 acres (Ministry of Welfare, Report on the working group on development and welfare of Schedule Tribes during VIIIth plan, 1990-95).

Infrastructural facilities in the Vansada are either inadequate in comparison of state or poor in its quality in terms of its physical use and quality of services. Villages had begun electrification but either village household had not taken connection or adequate and regular power was not supplied. Similarly, in those village schools were there but either student dropped out or teachers remained absent similarly was the conditions where health facility after long distance was available but in most of the cases either doctor was available or drugs were not available, moreover, on account of the cultural taboos, tribals were also least interested. The villagers were mostly gets isolated in monsoon as in case of most of the areas as pakka all weather roads were not available.

Some times "NGOs" are playing vital role in the area of health and educational services out in the Vansada area even Gandhian Voluntary agencies were not working as it was found that in the whole area there was not a single "Ashram Shala" which was generally run by NGO (Gandhian). However, there was an influence of religious organizations for example; both the Christian missionaries and several Hindu sects had members among Vansada tribals (Bhatt-2004). Among Hindu sects "Moksha Margis" were most dominating ones. They were made free from alcohols and mindset with progressive outlook. The Wadi project beneficiaries were easily found adjusted with precondition of refrain from alcohol consumption.

Development contribution of Government in the tribal area has come from various agencies which include District Rural

Development Agency (DRDA); Forest Department; Agriculture Extension Department; Tribal Sub-plan and Public Sector Banks including Rural Regional Banks etc. On account of inadequacy of funds along with poor utilization, worst delivery system and absence of coordination none of the government agency could create a 'positive impact' though "Negative Impact" of dependency and corruption are exposed by public at large with regard to working of Government Agencies.

3.6 Concluding Observation

The critical overview of the tribal poverty and backwardness leave prior to wadi project with a major impression that despite almost three decades of independent state of Gujarat: tribals have failed to remove the barriers of deprivation. It is this failure which led the very significant development model of wadi for the tribal development.

CHAPTER – 4

EVOLUTION OF WADI : AN ANCHOR OF TRIBAL DEVELOPMENT

4.1 Introduction

The present chapter is a documentation of origin and evolution of wadi as an 'Anchor' to Tribal development, provides a background that helps one to appreciate its work on sustainable livelihood of the tribals in Comprehensive Tribal Development.

4.2 Origin of self-employment mission leading to Wadi project

BAIR (Bhartiya Agro Industry renamed as BAIF Development Research Foundation) is perhaps India's largest Voluntary Organization (VO), a brainchild of well-known Gandhian, late Shri Manibhai Desai, who was very close to Gandhiji. The approach to Rural Poverty originated and articulated by Manibhai, in consultation with Gandhiji. Manibhai himself stated that it was diagnosed and taught by Gandhiji that 'India is poor because rural families are drastically under employed..... unless we provide employment to millions, dream of a prosperous India will not be possible' (Connie Howard, 2000).

As Dr. Desai mentions: "Gandhiji desired me to take up this challenging task of creating opportunities of self-employment for millions of rural families as my life mission". (Connie Howard, 2000) However, Manibhai made important modifications and made the challenge more difficult by adding the word "gainful" as a prefix to self-employment, which encouraged Manibhai to develop a totally New approach, an admixture of Gandhian values and modern technology based management that became his life mission. It is reflected in the Mission statement of BAIF: "BAIF Mission is to create opportunities of gainful self-employment for the rural families' especially disadvantage sections; ensuring sustainable livelihood; enriched environment improved quality of life and good human values" (BAIF Annual Report, 2003).

To realize the Mission, actions are woven around creation of confidence among beneficiaries; sustainability of the programme, realization of gains by beneficiary to sustain participation, women centered actions, people's participation, motivational role of the VO,

assistance to ensure market, production and training (MPT), insistence on value-based process of development to ensure "human development". Above stated brief description of the origin and mission of BAIF will be extremely useful to understand and appreciate the origin and evolution of "Wadi" programme - An Anchor of Adivasi Development.

4.3 Origin of Wadi project

The entry of the BAIF in Vansada area of the project was dramatic. It was in 1982, Sadguru Seva Sangh, founded by Mafatlal, invited their family friend Manibhai to take over its project of Rs. 5 million in Vansada, where poverty was perceived as a "bottomless pit" (Bhatt, 1987). Tribals had an extremely hopeless condition and suffered from a lack of confidence. Howard notes, "They say, we are good for nothing, we can't do anything, we are living because we are not dying" (Howard, 2000). This was the extent of their frustration and therefore, customary drinking got converted in to habitual daily over drinking leading to outright 'Alcoholism'. Thus, tribals became victim of a 'vicious cycle', starting and ending with drinking and poverty. They drink due to hard work and starvation and self defeatism and drinking which resisted any development, (Dilip Shah, 1992).

It is very interesting but less known fact that at the time of transfer of the project by Sadguru Seva Sangh to BAIR, there was an on-going activity of developing the forest and wasteland of the area, involving the local tribals, with the support of Government's Food for Work programme. The land was given by the forest department. The total land was more than 700 Hectors.

The scheme of the land development was like this: the project was to distribute one hectare of degraded forest wasteland per tribal family which they would work on to develop it; One and half acre of land would be returned to the forest department on development, the remaining would be retained by the tribal family on 'usufruct' basis. In the usufruct system, one can enjoy the fruits of the land on a permanent basis but cannot own the land, nor can mortgage or sell it. "BAIF had essentially continued with this activity because they find it as most appreciable and effective approach to poverty alleviation" (Bhatt, 1987).

Thus, a right type of project was undertaken but it failed to achieve its objective of rehabilitation of tribals prior to entry of BAIF, under the leadership of late Manibhai.

The translation of BAIF philosophy and approach was reflected in the very strategic reforms in its programme of wasteland that became the project 'Wadi', a model of Sustainable Tribal Development. Its notable that reform were not imposed from above, like government programme but evolved with true participation of the beneficiaries, and that too with voluntary participation without the stick of subsidy!

4.4 Evolution of the project

Wasteland development programme evolved into 'Wadi' development project. The model over a period of time evolved as a project and not readily designed. We may briefly summarize the basic tenets of wadi project as follows :-

I) Instead of government wasteland, the farmer's own land was given priority, though original system also continued where wasteland was allotted to some tribals as tribals had deep love for their own land.

II) The project was not open to all. Entry was open for only those who agreed to leave drinking alcohol. Thus, elimination of a basic barrier to tribal development was made conditional to participation.

III) Most appropriate choice of fruit or produce was suggested by 'tribals' themselves which they regarded as "Kalpvrux". It is recorded in the writing of late Mainibhai (Chandrakant Desai, 2000).

IV) "They were starving because there was no work, so they had to find self employment. Some of them could do some plantation, but could not decide which fruit or tree. So, it was decided to let these tribals decide which tree of fruit plant. After getting an answer in "mango", they were further asked which variety of mango they would like to plant. The answer was "alphanso". This mango proved itself as 'Kalpvrux', a tree that satisfies one's desire. This tree really proved itself as Kalptaru in Vansada. Thus, "Mango" production became an anchor. The project popularly became a "Wadi Project".

V) Though mango remained major fruit plant, which could ensure the permanent income after 5 years, in view of the nature of forest land, forest trees were also encouraged to be grown. The

species were mixed planted so as to meet the family needs for fuel, fodder and small timber.

VI) However, it was realized that the farmers required to sustain on the project. The project was so designed that during their labour on their farms, participants were given daily wages from the National Rural Employment Programme (NREP) of the government. It was ensured that with government help each family would get the benefit of NREP for labour on their own wadi project for three years. This had proved a strong incentive to avoid migration.

VII) Over a period of time, it was realized that major challenge was 'water', apart from land development through fencing and land shaping, to make land cultivable. So, under BAIF's guidance and assistance, a simple but cost effective 'water conservation' plan was prepared.

Technologies were developed for collection and preservation of rain water by underground water tanks; horticulture; bushes and grass were developed for recharging the aquifer below the ground. This relaxed the problem of a drinking water also.

A part of the process of raising the orchard, bunding, small dams or nallahs and even mini check dams were designed and constructed by farmers on wadi; traditional technology like nala bunding through gunny bags filled with sand and soil were also utilized. Pumps and pipelines were laid to carry this water to the orchard and adequate water supply ensured in each land and 1600 pits were dug for fruit, and forest tree plantations. Wadi participants were trained in how to fill up the pits with proper mix of soil and fertilizer. Thus, it was a watershed development project that was based on least cost.

VIII) Though Mango was the most prized fruit among the tribals, it was difficult to manage enough supply of seedlings of the high quality quick yielding variety. It was too unviable and expensive to get these bulk supplies right in time with reasonable cost. BAIF took pains to research on a grafting of quicker high yielding quality mango and then each village group of 20 was taught how to graft those special mangos so that needed supply of seedlings would be readily available within the village instead of having to get from the commercial nurseries. This eliminated the heavy cost of transport and damage and most

important benefit of the scheme was a provision of immediate marginal income to the participants. Learning the mango grafting techniques and supplying these seedling to fellow villagers offered an income to the tribals and women.

IX) During the process of Wadi implementation, it was realized that apart from wage income, some income for sustaining their daily needs was required. So, in the margin plots, short gestation crop such as seasonal fruits, pulses and vegetables were also encouraged. Thus, an element of supplementary income source was developed.

Traditional societies have their unique and useful traditions. 'Walvi' tradition is one of the powerful traditions backed up by social acceptability. 'Wadi' means to grow. There is custom among tribal women to have open space around the house, mostly in the backyard of the house, which is used to grow vegetables and plants, fruits for the family consumption out of wastage/used water and any surplus products are sold in the market. The tradition of wavli is such that the income belongs solely to the women, to be spent by them according to their desire and decision. Women made entry in BAIF's programme, through this system that provides an opportunity to earn income. It was decided that groups of 15 women would form a self help group in each village who would be formally trained in scientific mango grafting/nursery growing, provided with small working capital and helped to ensure enough water supply. Thus, three benefits were derived: the project was assured of supply of nursery samplings, women got income and the project had participation of women. It must be stated that this type of activity was not pre-designed and hence was a notable development.

X) Wadi Project evolved its own technological devices based on traditional knowledge and equipment, improved and upgraded to enhance productivity, reduce costs and to ensure the reduction in drudgery in manual work process - in digging pits, maintenance of recommended spacing between plants, selection of two or more crops to minimize the biological and marketing risks, selection of a mix of short duration cash crops until the orchards developed and start yielding, mango grafting, nursery raising etc. New techniques of wasteland conservation and water harvesting were designed. BAIF had done pioneering work in these areas not out of any plan but as a part of evolutionary

process of the Wadi project. Most significant part is capacity building process through which technologies and techniques are successfully transferred to beneficiaries by training programme and these technologies are practiced also.

XI) Finally, it was soon realized that sustainable livelihood even by successful 'Wadi' will be incomplete and unsustainable in the absence of a nearly market. Long gestation of production provided some time to develop market related institutional and infrastructural facility though assistance of CAPART. A processing unit was established in Lachhakadi campus at Vansada. Tribal beneficiaries are trained to manufacture mango products. Initially mango products were marketed by BAIF. But it was planned that eventually marketing will be looked after by a tribal producers' cooperative and accordingly such a cooperative was first organized in Lachhakadi.

4.5 Operational Mechanism of Wadi Programme

Gujarat has a tradition of allotting small plot of land for fruits, vegetables and flower cultivation. This is popularly known as 'Wadi' (an orchard), different from 'Khetar' (farm) where generally food or cash crops are grown.

We can observe specific step by step operational mechanism of wadi development which indicates adoption of a very scientific towards an otherwise unviable traditional tribal. Steps involved in this respect are briefly summarized below :

(A) Project implementation agency (DHRUVA) conducts a techno-economic feasibility of the wadi in the village, in consultation with potential farmers and technically expert staff.

(B) The well-designed wadi-layout is down to develop 40 cashew, 20 mango and 800-1200 forest trees. Plants for the plantation and intensive care are drawn for three years with protective measures including fencing. A model of the layout is shown in Annexure - I.

(C) All major components of the wadi activities are well defined in terms of inputs, equipment and time schedules. A detailed checklist shown in the Annexure - II exhibits each component, with specific period.

(D) There is a continuous online technical monitoring of activities by trained local youth, through Ayojana Samiti. Farmers are guided in the best use of modern inputs.

(E) There is provision of establishing. Agro-service Centre through village Ayojana Samiti for timely and adequate supply of inputs such as fertilizer, pesticides and agricultural implements.

(F) A systematic institutional arrangement is developed to ensure procurement and processing of cashew and mango. Ayojana Samiti procures the raw material and supplies to village based cooperative, which sales the marketable produce to apex body at Lachakady i.e., Vasundhara cooperative. It is also responsible for marketing and distribution of the finished products.

(G) The wadi programme includes some other supporting activities that have a significant role in making it a viable enterprise. There are :

- Season-wise Annual "Wadi Aftercare" calendar.
- Awareness generation for scientific 'wadi' programme.
- Capacity building through training, on a variety of components, for wadi farmers.
- Systematic four tier monitoring system - at the levels of members, field guides, junior agricultural staff and senior staff.

(H) Finally, the in-built support system to wadi producers is the crux of the whole mechanism. As wadi producers are suppose to provide their labour contribution and be ready to work in groups ('paltha'), under the guidance of DHRUVA, they are provided some wage for their labour on their field. This is incentive wage, not minimum wage.

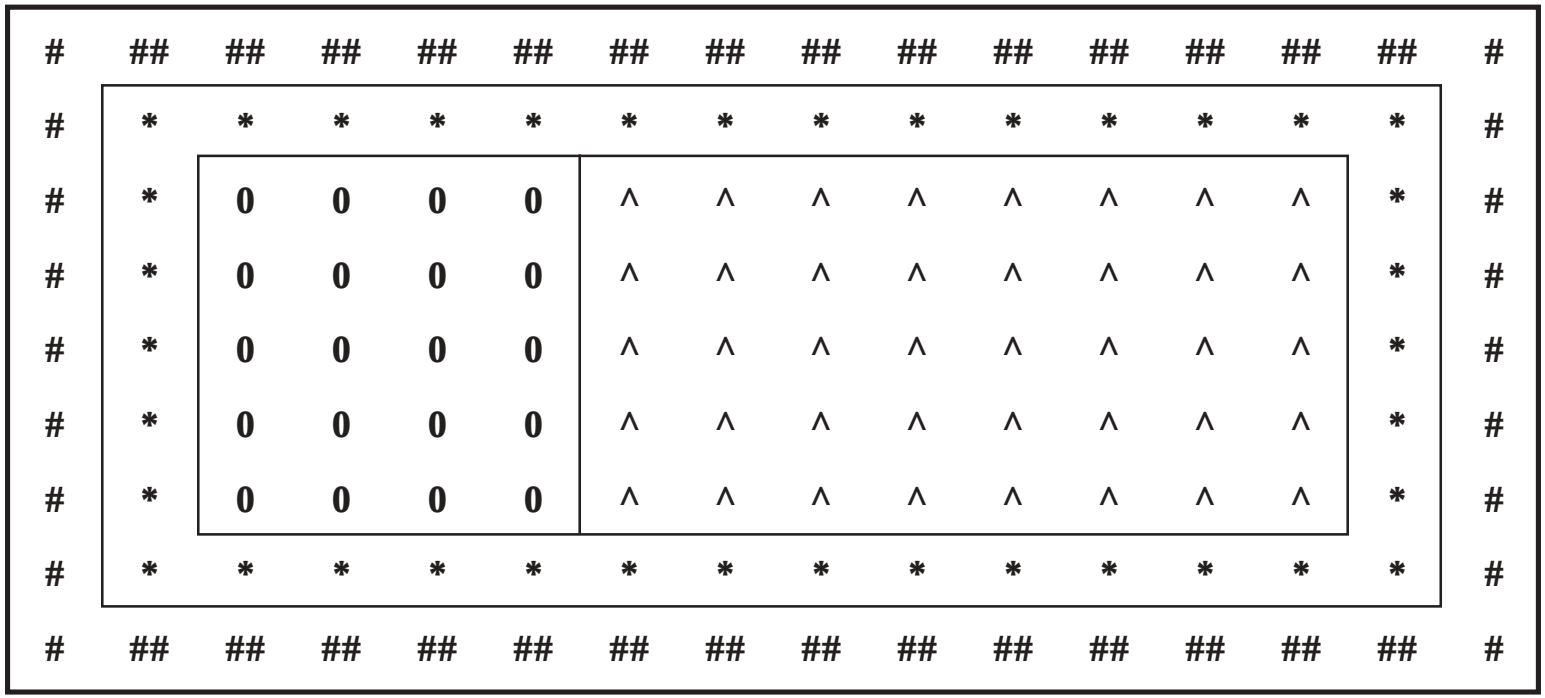
However totally supported by project fund, which extends 100% grant to wadi beneficiaries.

Thus, operational mechanism of the wadi development is very systematic and founded on scientific basis with appropriate and timely technology support.

4.6 Concluding Note

The exposition of wadi concept and its operational mechanism, its evolution by stages, explains the emergence of an instrument of sustainable tribal development. The inbuilt system of assured wages to producers during the project period as well 100% grant for wadi project ensured appropriate implementation of wadi project.

Annexure - 1
Wadi Layout (1 Acre)



 # : Fencing *** : Forestry** **0 : Mango** **^ : Cashew**

Mango : 20, **Cashew : 40,** **Forestry : 2000**

Source : ***Project Preparation Report, Ministry of Finance.***

Annexure - 2

Table : Wadi Development — Checklist of activities

Item	List of activities	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Yr7
A. Fruit								
Preparation and Plantation	Pit digging	1						
	Pit Filing	1						
	Plantation	1						
	Gap filing		1	1				
Post Plantation	Earthing up	1	1	1	1	1	1	1
	Staking	1	1	1	1	1		
	Basin Preparation I	1	1	1	1	1	1	1
	Basin Preparation II	1	1	1	1	1	1	1
	Basin Preparation III	1	1	1				
	Shed preparation							
	Dry mulching	1	1					
	Plant Sanitation I			1	1	1	1	1
	Plant Sanitation II			1	1	1	1	1
	Weeding	1	1	1	1	1	1	1
	IPM	1	1	1	1	1	1	1
	Fertilizer application in trench		1	1	1	1	1	1
	Organic Manure Production and application	1	1	1	1	1	1	1
	Foliar fertilizer sprays	1	1	1	1	1	1	1
	Pruning				1	1	1	1
B. Forestry								
Pre planta- and aftercare	Pit digging & plantation	1	1					
	Earthing up & pruning	1	1	1	1	1	1	1
C. Fencing								
Living hedge & dry fence preparation & Maintenance	Dry Fence Preparation	1						
	Live hedge Plantation	1						
	Dry Fence Maintenance		1					

Source : *Project Preparation Report, Ministry of Finance (1993).*

Annexure - 3

Time-line – volution of the Wadi Project

Sr. No.	Reference Period	Landmark
1	1967	Sadguru Seva Sangh entered Vansada as Relief Work Agency through distribution of food, blankets, clothes etc.
2	1979	Almost 10 years worked as Development Agency, implemented wasteland development project with government programmes of employment.
3	1980	Arwind Mafatlal, chief of Sadguru Seva Sangh realized the poor progress and even counter efforts productive.
4	1981	Mr. Manibhai took over through BAIF and resumed the project on tribal development on new lines of 'Wadi' project with substantial changes.
5	1982	The Wadi project launched with NREP to ensure cash wage for wadi labour for soil conservation.
6	1985	The second phase through National Wates and Development Board funds helped gaps filling by provision of implementation for Agro Forestry and wage payments to all beneficiaries.
7	1985	UNICEF sponsored community health programme gave additional push to integrated development.
8	1985	Establishment of Vasundhara Vriksha Van Wadi Jalsinchan Vikas Sahakari Mandali, process of institution building began.
9	1988	CAPART funding helped IIIrd stage with women development component in wadi programme and better integration of the programme with Training and Capacity Building.
10	1988	Wadi supported by post harvest technology with establishment of CAPART funded processing unit of mango (Vasundhara Cooperative).

11	1993	Project Preparation Report on Wadi based Adivasi Development Programme.
12	1995-96	Dharampur - Kaprada project of Wadi base Tribal Development initiated through.
13	1997-98	Adivasi Seva Sansthan Award of Maharashtra for Wadi-based Tribal Development.
14	1999-2000	Reorganization of Wadi Project by UNDP as a Replicable Poverty Alleviation Model.
15	2000	Baseline study of the project area by Agricultural Finance Corporation.
16	2001	First Evaluation Study of the Project - by AFC.
17	2000-01	International reorganization of 'wadi' model in Germany.
18	2001-02	Project wadi extended to Dangs.
19	2003	Maharashtra state officially accepts 'Wadi' programme for Adivasi Development in its Budget 2003-04.
20	2003-04	Gujarat adopted 'Wadi' under 'Gujarat Pattern' of Tribal Development.

CHAPTER – 5

FINANCIAL AND PHYSICAL PROGRESS OF THE WADI PROGRAMME: A PERFORMANCE ANALYSIS

5.1 Introduction

The present chapter reviews the financial and physical progress, recorded by the project executive agency ("Dhruva") during 1995-2003, in terms of specific parameters. The choice of parameters depends on the significance of such parameters in our analysis as well as available data for the analysis. Whenever, the 'targets' are fixed, our discussion is in terms of those targets. To simplify the analysis, we have taken the data mostly from single source, that is, the Annual Reports of Dhruva. First part of the chapter is devoted to financial performance and second part deals with physical performance analysis.

5.2 Financial Performance

Prior to the extension of 'Wadi project' in the Comprehensive Tribal Development Project funded by KfW-Germany, Ministry of Finance had sponsored a Project Preparation Report (PPR) that formally designed the project with financial estimates to implement it in Dharampur and Kaprada during 1994-2004.

The expert committee that had prepared the PPR (Project Preparation Report), did establish the costs, price and unit rates prevailing in December, 1992. Total cost of the project for 10 years (1994-2003) was worked out at Rs. 4273.71 million (1992 prices). Assuming 8% inflation, adjusted cost was worked out at Rs. 469.12 million. However, the latest budgetary provision for the project, extended to, 2006 is Rs. 550 million which is expected to cover Dharampur and Kaprada taluka of Valsad and the extended area of Dangs. The present coverage is 13,662 families and 162 villages (DHRUVA-Review Report, 2004).

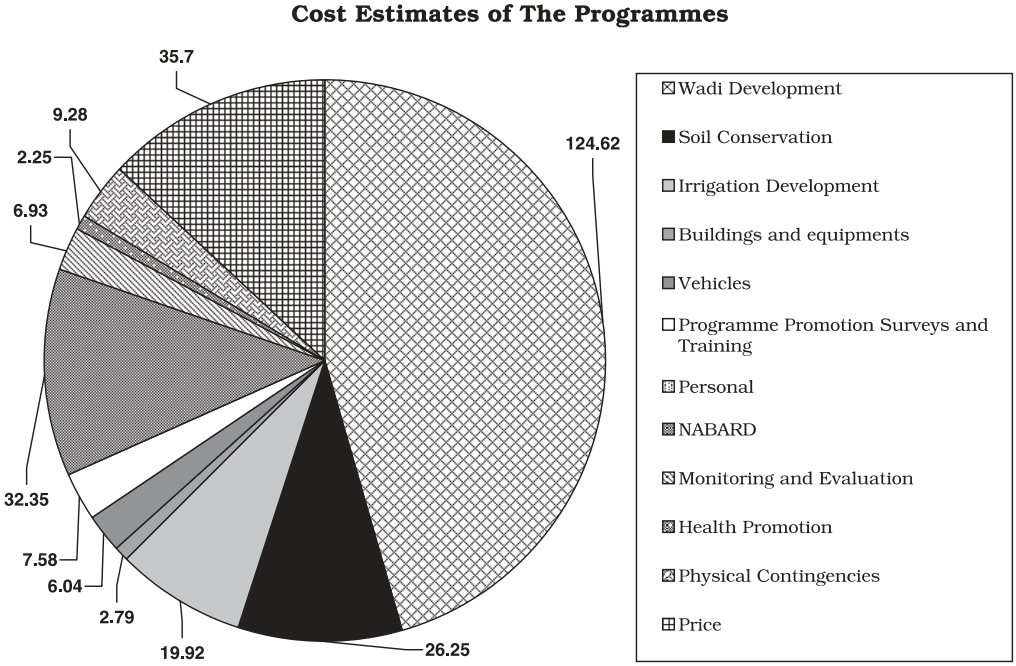
The detail cost of financing the 10-year programme is shown in table - 5.1

Table 5.1 : Cost estimates of the Project

Sr.No.	Item	Rs. Million	% share
1	*Wadi Development*	124.62	26.60
2	*Soil Conservation*	26.25	5.60
3	*Irrigation Development*	19.92	4.20
4	*Buildings and equipments*	2.79	0.60
5	Vehicles	6.04	1.30
6	*Programme Promotion Surveys and Training*	7.58	1.60
7	*Personal*	32.35	6.90
8	*NABARD*	6.93	1.50
9	*Monitoring and Evaluation*	2.25	0.50
10	*Health Promotion*	9.28	2.00
11	*Physical Contingencies*	35.70	7.60
12	*Prices Increases*	195.41	41.60
	Grand Total	**469.12**	**100.00**

Source : *Project Preparation Report - 1993.*

Chart - 5.1



It is interesting to observe that 'Wadi', despite being a major programme, did not have even 50% of the budget, the special care has been taken to retain the real value of the project by provision of 41.6% outlay in the budget. Cost of administration, including NABARD service charges and monitoring and evaluation, constitute less than 10% which is reasonable.

The recommended Wadi package by farm size was as follow (table - 5.2)

Table 5.2 : Recommended Farm size of Wadi

Sr. No.	Plot	Cat. I 3.00 Acre	Cat. II 3.00-4.00 Acre	Cat. III 4.00-5.00 Acre
1	*Wadi Plot (Acre)*	1.50	1.25	1.00
2	Vegetable Irrigation Plot (Acre)	0.50	0.00	0.00
3	*Grand Component*	75%	75%	75.25
4	*Loan Component*	25%	25%	25.00

Source : *Project Preparation Report - 1993.*

Though 75:25 grant loan ratio was recommended but, it is reported by BAIF, in view of the poor condition of the tribals, the loan component has been removed and it has been now 100% grant based programme.

The detailed cost of Wadi was not estimated by experts. However, there are BAIF studies which have estimated the cost. A study by Sharad Mahajan and others of BAIF has estimated the cost per family for development of 0.4 hectare orchard model (Wadi). Their estimated cost is provided in the following table - 5.3.

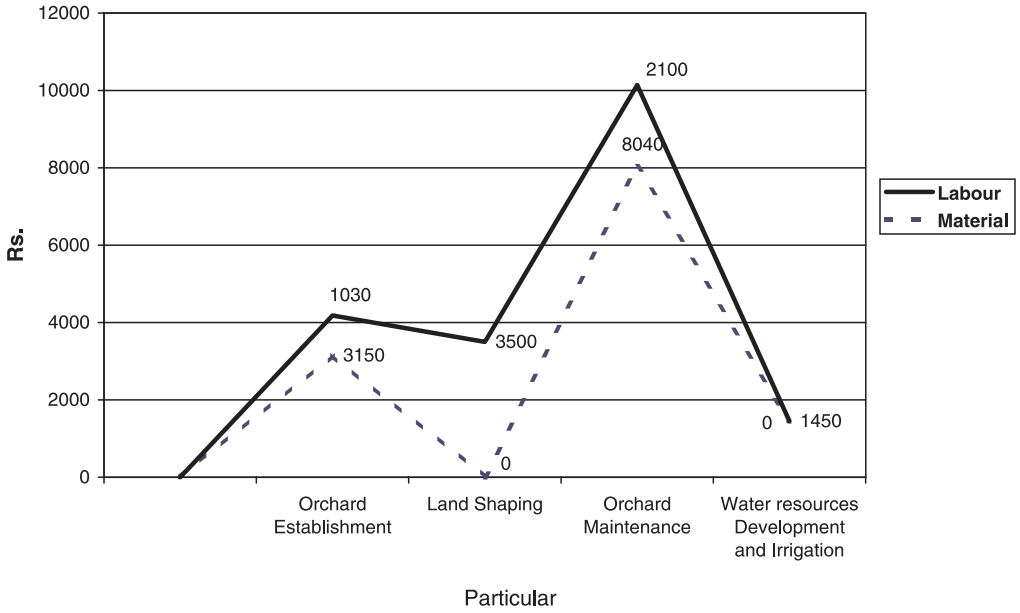
Table 5.3 : Per family cost of development of 0.4 ha. orchard (Wadi)

Sr. No.	Particular	Material	Labour	Total Cost
1	*Orchard Establishment*	3150	1030	4180
2	*Land Shaping*	–	3500	3500
3	*Orchard Maintenance*	8040	2100	10140
4	*Water resources Development and Irrigation*	1450	–	1450
5	*Credit Component*	*25% of above costs*	*For income generating activities water resources development and irrigation*	
6	*Training and Health Components*	*About 5% of Total cost per family for 5 years*	–	–
	Total Costs			**19270**

Source : *How successful is the Wadi Model - Leisa India : Sep-2001, Sharad Mahajan-Madhuri.*

Chart - 5.2

Per Family Cost for Development of 0.4Hq. Orchards (Wadi) (Rs.)



It is interesting to note that estimated economic rate of return of whole programme of Rs. 5500 million is about 17.6%. However, reduction in benefits (Yield or Price) by 20%, it was observed, may cause the economic rate of return to fall by 13% (PPR 1994). However, estimation of accurate relationship between cost and benefits is neither possible nor acceptable for several reasons.

The financial performance analysis includes the utilization of funds as per the 'heads' under which outlay is provisioned. The major heads are **(a)** capital items: Wadi establishment and maintenance, soil conservation and water resources etc **(b)** operation and maintenance etc **(c)** personnel of executing agency, includes project staff salary, training center staff, consultants and programme management **(d)** health promotion scheme, include a wide variety of items from personnel and health management to kitchen gardens **(e)** physical contingencies, include all unclassified items, starting from women-development to craft based activities.

Utilization of funds, between 2006 budget and actual expenditure up to March-2004, are summarized in table - 5.4 :

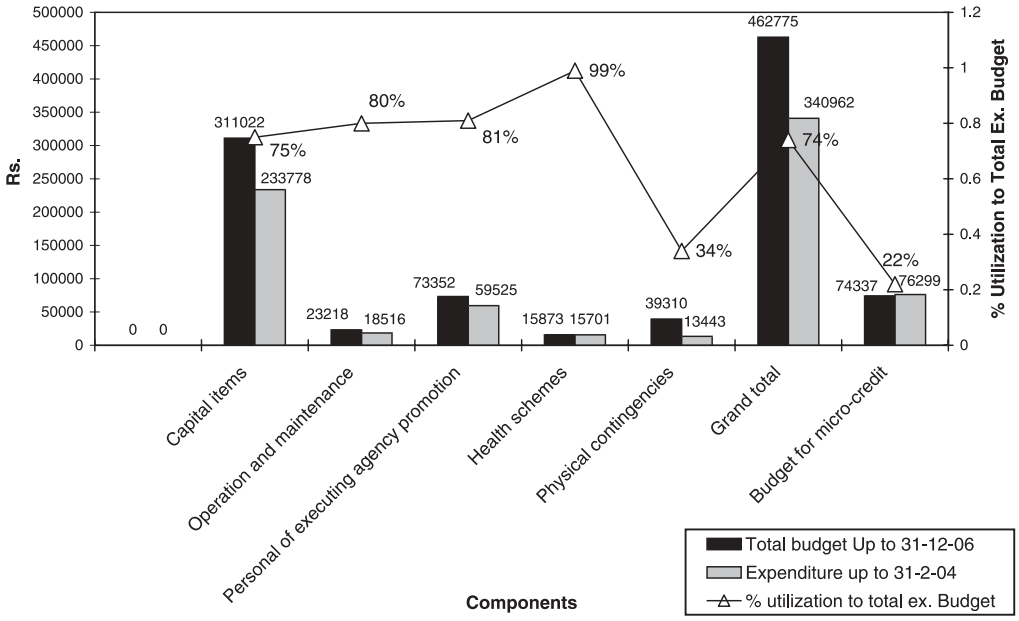
Table 5.4 : Fund utilization

Sr. No.	Components	Budget up to 31-12-06 (Rs.)	Expenditure up to 31-2-04 (Rs.)	% utilization of total ex. Budget
1	*Capital items*	311022	233778	75%
2	*Operation and maintenance*	23218	18516	80%
3	*Personal of executing agency promotion*	73352	59525	81%
4	*Health schemes*	15873	15701	99%
5	*Physical contingencies*	39310	13443	34%
6	*Grand total*	462775	340962	74%
7	*Budget for micro-credit*	74337	76299	22%

Source : *Derived from the data collected from BAIF Head Office (1004).*

Chart - 5.3

Financial Fund Utilization



On the basis of the utilization pattern of the allotted budget, we may observe :

1. Budgetary provision was upto 2006 (and two years are left) but 74% of the funds are already utilized by 2002-03.

2. There are certain items in which utilization has exceeded the allocated funds, which include building, vehicles, programme promotion etc.

3. Funds related to Wadi establishment and maintenance also has recorded 79% utilization.

4. It is quite noteble that budget for Micro Credit Programme was Rs. 6,37,112 where out of that only Rs. 3,57,261 are utilized i.e., 22% of the utilization calls for substantial improvement in the performance. Another important evidence of good financial resources utilization is the fact that the funds meant for 10000 cases of households of Wadi beneficiaries and has been used for 12000-13000 beneficiaries and yet BAIF management officials claim that the overall Wadi cost is less than estimated Rs. 20000 to Rs. 22000. Actual cost of Wadi is Rs. 19780. It

was explained to us that this was possible due to low level of establishment cost and economies of scale in certain infrastructural and communication facilities supporting the programme.

Thus, financial performance of the programme could be rated as quite efficient and satisfactory.

5.3 PHYSICAL PERFORMANCE OF THE PROGRAMME

The progress in physical implementation of the programme could be examined in the context of the following aspects

(a) Physical coverage of beneficiary villages and beneficiaries.

(b) Wadi development.

(c) Non-wadi supportive programmes for sustainable development through wadi development.

(A) PHYSICAL COVERAGE OF PROGRAMME BENEFICIARIES

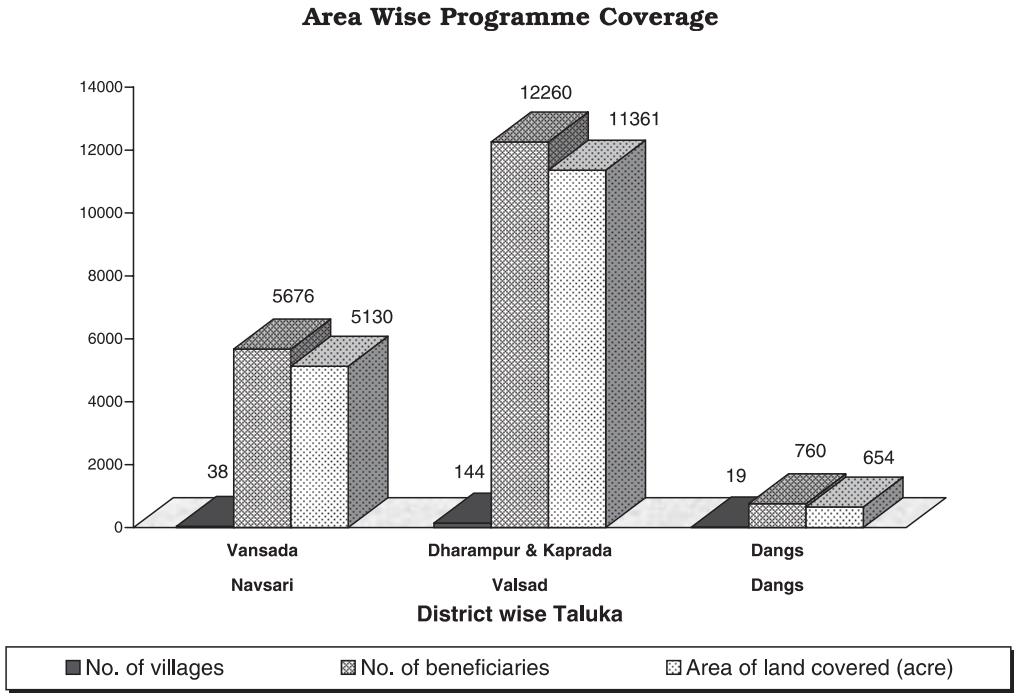
The physical coverage of the programme of Adiwasi development has been gradually spread. Though benchmark data from 1982-83 is not available, an early study on rehabilitation of tribals through wadi project conducted by IIM (Bhatt, 1987) records, from BAIF reports, that prior to the project sponsored by KfW, during 1982-1993, more than 5000 tribal farmers of 38 villages of Vansada area participated in the programme. Under the Comprehensive Tribal Development Programme (1995-2006), according to latest Review Statement of BAIF, the coverage has now extended to three blocks of Dharampur and Kaprada blocks of Valsad and latest extension was in Dangs. According to the latest report, total coverage of the project is 18696 beneficiary families, 17145 acres of land spread over 201 villages. If we relate the project coverage of villages and poor households with the total number of below poverty line (BPL) households, as per the BPL survey conducted by District Rural Development Agency-Valsad, we may say that 59% of the villages and 33% of the BPL households are covered by the project.

Table 5.5 : Area-wise programme coverage

District	Taluka	No. of villages	No. of beneficiaries	Area of land covered (acre)
Navsari	Vansada	38	5676	5130
Valsad	Dharampur and Kaprada	144	12260	11361
Dangs	Dangs	19	760	654
Total		**201**	**18696**	**17145**

Source : *DHRUVA Annual Report, 2002-03.*

Chart - 5.4



There are isolated examples of the withdrawals of the beneficiaries also (BAIF journal, 2000) but reportedly been rehabilitated subsequently by special efforts, details of which are documented in BAIF Staff Studies (Jyoti Desai, 2002). This study has observed that many time beneficiaries withdraw from the project due to miscommunication, inadequate communication which caused 'misunderstanding' that led to withdrawal.

(B) WADI DEVELOPMENT

'Wadi', an anchor of the comprehensive tribal development, was to be developed as per the specification laid down in the PPR. Accordingly, each Wadi of one acre was to be supplied of 600-800 trees per wadi. However, a latest report of BAIF states in a systematic wadi lay out on an one acre plot with fencing, 20 mango, 40 cashew and 200 forestry trees are planted, as specified by the project executing agency DHRUVA.

The gradual process of 'Wadi' development is recorded in table - 5.6 and Chart - 5.1, detailing the Batch-wise progress and providing a graphic depiction of the overall progress (1995-2001).

Table 5.6 : Batch-wise Wadi development

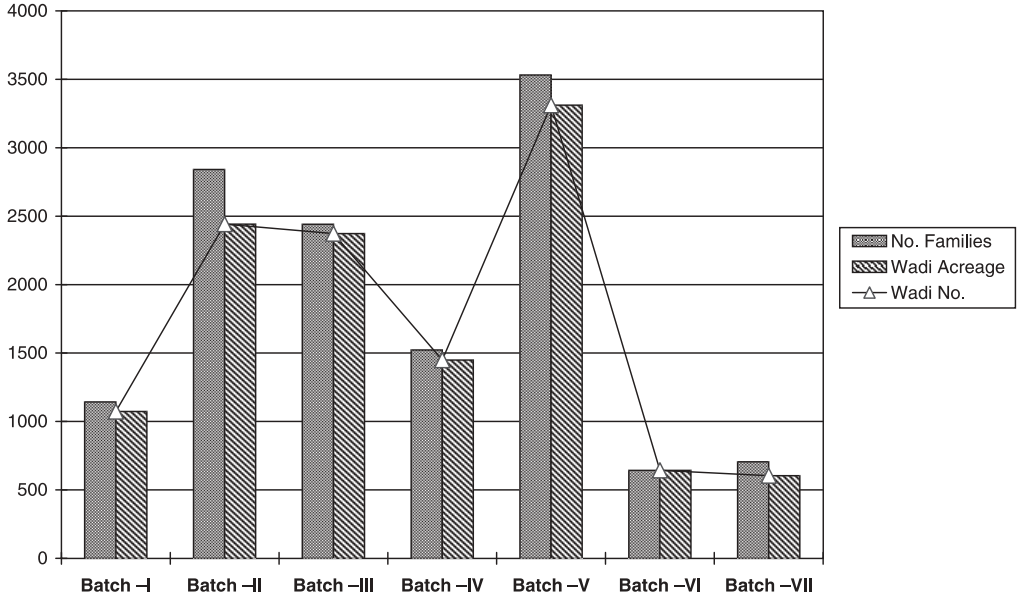
Sr. No.	Batch No. and year of joining	No. of villages	No. of new villages	No. of families	Wadi acreage	Wadi No.
1	*Batch - I (1995-96)*	40	40	1143	1073	1073
2	*Batch - II (1996-97)*	85	49	2841	2442	2442
3	*Batch - III (1997-98)*	72	25	2441	2373	2373
4	*Batch - IV (1998-99)*	52	19	1522	1449	1449
5	*Batch - V (1999-2000)*	114	03	3532	3311	3311
6	*Batch - VI (2000-01)*	10	08	643	643	643
7	*Batch - VII (2001-02)*	18	18	705	604	604
	Total	**391**	**162**	**12827**	**11895**	**11895**

Source : *BAIF Progress Report - 16 Dec. 2002 to 3, Mar. 2003.*

Note : *During 2002-03 69 families have been covered under the additional support from KfW as Batch VII.*

Chart - 5.5

Batch Wise Wadi Development



A significant element in the Wadi Development is its 'cluster' approach. This approach has been very effective in development planning of the villages. The programme has been developed in the following clusters, as shown in table - 5.7.

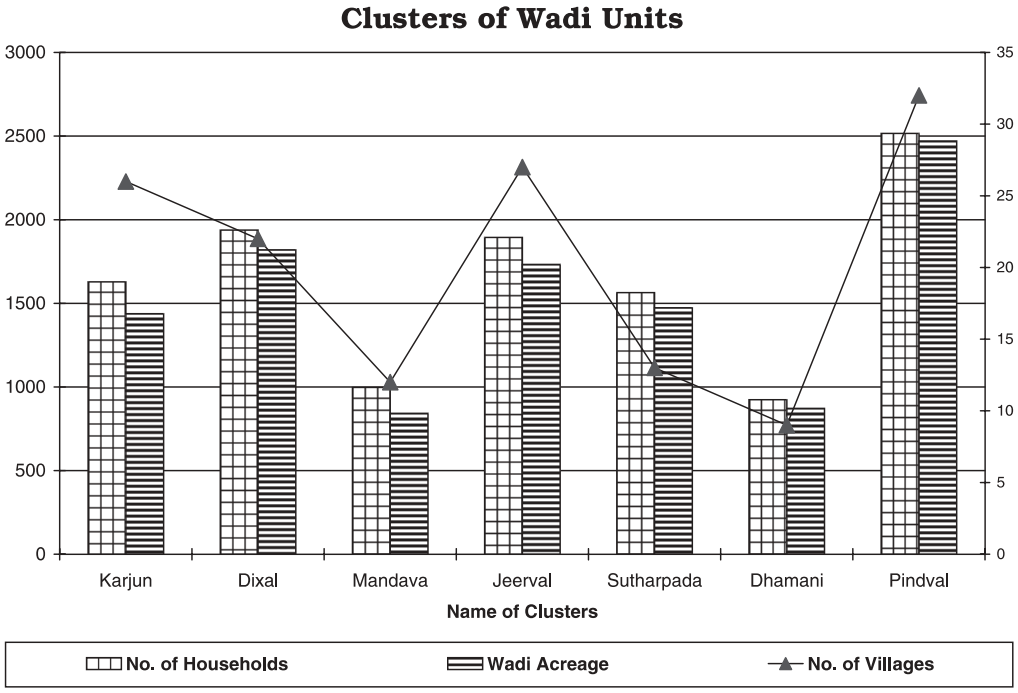
Table 5.7 : Clusters of Wadi units

Cluster No.	Name of the Cluster	No. of villages	No. of households	Wadi acreage
1	*Karjun*	26	1628	1438
2	*Dixal*	22	1938	1819.5
3	*Mandava*	12	997	842.5
4	*Jeerval*	27	1894	1732.5
5	*Sutharpada*	13	1564	1473.0
6	*Dhamani*	09	924	872.0
7	*Pindval*	32	2516	2470.5
Total		**141**	**11461**	**10648**

Source : *BAIF Reports.*

Note : *Last two cluster comes under the field of the project in the part, year 1997-98-99.*

Chart - 5.6



Latest annual report project implementing agency states that, since 2003, clusters I and II have been withdrawn from the project as their time period is over and new cluster VIII introduced in 2002-03, 69 families have been covered in Dharampur with additional support.

(C) WADI PLANTATION

Wadi Plantation is designed with specific number of plants according to latest report. In each one acre of Wadi has plantation of 20 mango, 40 cashew and 200 forestry trees are planted on scientifically fixed wadi layout designed by the project executive agency. Thus, each family looks after at least 260 plants, as each owns a Wadi of an acre, which is a significant productive asset. The following table records the detailed data of plantation in different project areas until 2001.

Table 5.8 : Plantation of Wadi

Project Area (Taluka)	Navsari	Valsad	Dangs	Total
Year	1982	1995	2001	—
Wadi	5130	12122	604	**17856**
Mango	204520	225840	12090	**442450**
Cashew	4000	451680	34160	**479840**
Forest trees	1556300	5646000	302250	**7504550**

Source : *DHRUVA Annual Reports 2001-02, PP.-4.*

(D) WADI PLANTATION MANAGEMENT

Intense involvement of the NGO in Wadi is evident in the aftercare of the orchards and their general management. Good management practices are essential for healthy growth and survival of the plants, something that is beyond the capacity of the tribals. Dhruva deserves special complements for its very well arranged system of integrated nutrient management and integrated pest management adopted at the farm level. These steps are critical as Wadi is established on wastelands, deficient in several nutrients and organic manure. Integrated nutrient actions involve a balanced application of organic manure and application of synthetic fertilizers and foliar fertilizers. Integrated pest management is equally important for plant protection, priority is given to physical and biological pest control agents and care is being taken in the use of safe chemical pesticides.

Some additional steps were taken - earthing up of fruit/forest trees to prevent damage caused by excessive rain, fencing to protect the plants from strong wind and stray cattle and watering of fruit trees to prevent the plants from stress. Recently, intensive area development approach has reportedly been extended to more new villages, details of which are not available though.

Though these actions are not being taken for all farmers with equal intensity; every efforts are made to enhance these practices. Trainings are conducted regularly for the farmers and field guides on different pests, identification of the pests and taking appropriate measures. It was reported in the current financial year that “Intensive Scouting for the Tea Mosquito Pests” helped in breaking its life cycle and consequently controlling its spread.

(E) WADI PLANTS SURVIVAL

Horticulture production including production of mango is quite Traditional but it did not become instrument of poverty alleviation in the past. Its position as development instrument is like that of traditional animal husbandry and dairying until "Anand Pattern" model. It was also not taken seriously initially (Dilip Shah - 1980).

Traditional wadi did not become an instrument of poverty alleviation in the past the prime source of difficulty in the case of traditional Wadi is very high rate of the "morality" owing to various shortcoming like inadequate plant treatment measures and non-use of modern inputs. As stated earlier, one of the finest measures of the present project is excellent plant treatment accompanied by soil and water conservation. The obvious results of these interventions are reflected in almost 90% plant survival. The President's Foreward to the 2003 Annual Report particularly mentions the success in survival of plants, as high as 85% (DHRUVA, Annual Report, 2002-03).

Such a high survival rate could not be attained in all clusters, not all the wadi secures "A" grade even by the records of PIA. This study looked into cluster by cluster survival rates by plant species and constructed the following table - 5.9 on cluster and batch wise scenario of survival rates.

Table 5.9 : Cluster-wise and Batch-wise Survival and Mortality of Plants : 2002-2003

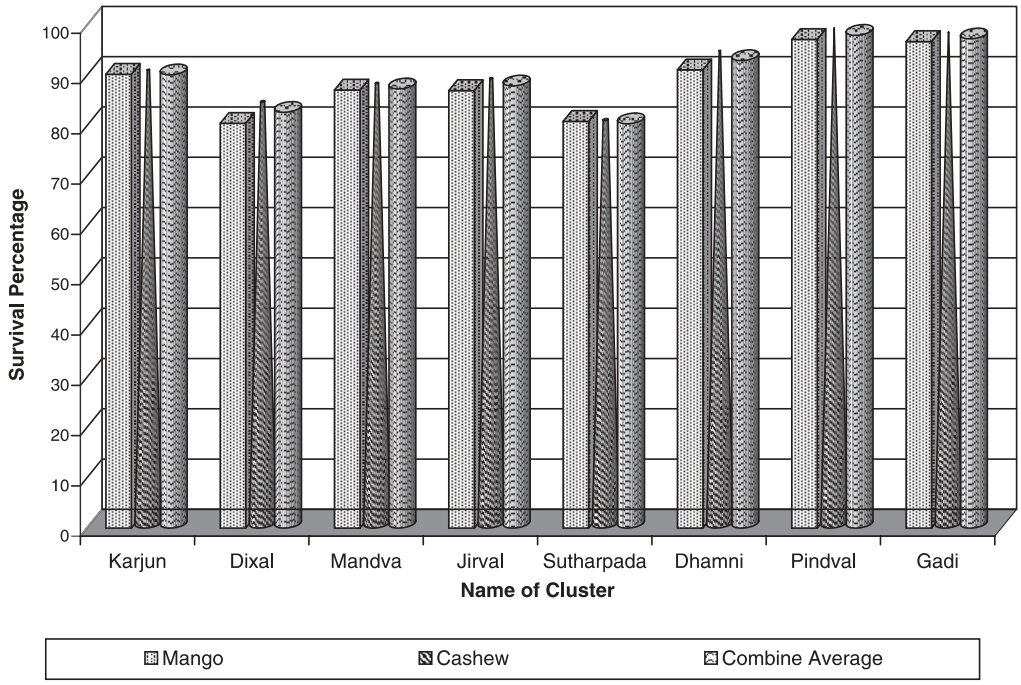
Name of Cluster	Survival Percentage			Mortality Percentage		
	Mango	Cashew	Combine Average	Mango	Cashew	Combine Average
Karjun	90.24	90.08	90.13	09.76	09.92	09.84
Dixal	80.50	83.79	82.69	19.50	16.21	17.85
Mandva	87.12	87.45	87.34	12.88	12.55	12.72
Jirval	00.87	88.40	87.93	00.13	11.60	12.30
Sutharpada	80.88	80.17	80.40	19.12	19.83	19.48
Dhamni	91.12	93.87	92.96	08.88	06.13	07.50
Pindval	97.17	98.40	97.99	02.83	01.60	02.21
Gadi	96.76	97.54	97.28	03.24	02.46	02.85

Batch wise Mortality & Survival Percentage						
Batch I	78	79	79	22	21	21
Batch II	74	75	75	26	25	25
Batch III	91	92	92	9	8	8
Batch IV	96	97	97	4	3	3
Batch V	96	99	9	4	1	8
Batch VI	97	99	98	3	1	2
Batch VII	100	100	100	0	0	0
Batch VIII	100	100	100	0	0	0
Grand Total	**89.23**	**90.34**	**89.97**	**10.77**	**9.66**	**10.03**

Source : *Derived from the Data collected from DHRUVA (PIA).*

Chart - 5.7

Cluster Wise Survival of Plants (Year 2002-2003)



Though, the table is self-explanatory, one may note the following observations :

1. In every cluster, survival rates, combined or separately for Mango and Cashew, are not less than 80%.

2. There are no significant variations in survival rates between Mango and Cashew, even though Cashew is a relatively new plant for tribals.

3. Batch-wise survival is more impressive - it exceeds 85% in case of oldest batch while it is less than 100% in new batches VII and VIII. This is unexplained.

In any case, survival rates are quite satisfactory. However, we don't have "trend data" and hence nothing could be asserted about its stability and sustainability as plants are often challenged by volatile eliminate. One can appreciate survival rates of plantation achieved under the project much better if one compares with wadi plantation done by government Tribal sub-Plan. For example, in Vavar village of Sutharpada cluster, there are 77 such wadis and a quick visit to such wadis would give an Idea of much lower plantation and survival rate.

During the year (2002-03) as reported by BAIF around 340 tones of mango was procured, to produce pickles and other products, while 120 tones of raw cashew and 26 tones of cashew nut sold in the market. Thus 140 tones cashew procured. The cashew apples used for production of non-alcoholic beverages and 6000 liters of cashew apples juice supplied for Ayurvedic preparation.

There is no systematic data regarding the production of wadi products, except the procurement of mango and cashew. On the basis of our discussion with Dhruva officials, we assumed that 25% of mango comes to Vasundhara for processing, but 100% in case of cashew arrives at the decentralized cooperative processing units.

On that assumption, we estimate that, at best, total production of cashew could be 1360 tones and some 140 tones in mango. However, production of mango and cashew, indicated in the PPR was 1850 tones of mango and 3100 tones of cashew in 2003-04. Going by that, output has fallen short by 26% in case of mango and by 69% in case of cashew.

Wadi could be sustainable instrument of tribal development provided it is adequately supported by other development programmes. The project designers have best realized this and, hence, we find the following components of wadi based Comprehensive Tribal Development Programme.

1) SOIL CONSERVATION

Soil conservation is a basic support for wadi development. Annual rainfall of the area is around 1800 mm. Heavy run-off, due to hilly area having slope of 20%-40% which calls for the treatments of trench cum bund in 5%-15% slope and tree plantation on 15% slope. On account of absence of appropriate water harvesting measures, rain washes away the top soil, making the land unfit for even Wadi. Moreover, unchecked felling of forest trees leaves the soil exposed to the forces of nature. Hence, well-designed soil and water conservation intervention is designed with involvement of wadi producers. It is reported that this programme started on a mass scale, and of late it has done well. Various trench-cum-bound tree platform and both are being implemented very fast in the wadi area. The process of soil conservation activity is illustrated in table - 5.10.

Table 5.10 : Status of Soil Conservation

	Total Family	Soil Conservation Work in Progress	Soil Conservation Work in Completed
Batch I	1143	89	768
Batch II	2841	356	1785
Batch III	2441	708	1401
Batch IV	1522	343	1119
Batch V	3532	931	2413
Batch VI	643	157	517
Batch VII	705	221	249
Batch VIII	69	31	25
Batch IX	769	500	0
Total	**13665**	**3336**	**8277**

Latest records state, 84% physical work has been completed. Until March, 2000, only 24% of the budget was utilized. Massive actions pushed up the utilization of fund by 80% by 31st March, 2004 which shows an accelerated progress in the social conservation actions.

2) WATER RESOURCES DEVELOPMENT

In early periodic assessment, this was regarded as slow area of action. The availability of water to irrigate a wadi plot is a pre-condition to the success the watershed development. Vansada, Dharampur and Dangs have created new awareness and environment for water harvesting and this is reflected in the momentous jump in the water resources development in wadi project, as could be observed from the following table - 5.11.

Table 5.11 : Water Resource Development

Sr. No.	Activities	1997/ 2000	2003 March	Cumulative Progressive
1	*Spring Development*	226	284	1400
2	*Lift Irrigation*	–	03	120
3	*Temporary Check Dams*	508	651	–
4	*Permanent Check Dams*	07	08	68
5	*Hand-pumps*	269	276	–
6	*Repair of Hand-pumps*	1154	1590	1100
7	*Repair of Check Dams*	–	24	–
8	*Desolating of Check Dams*	–	07	232
9	*Treadle Camps*	–	13	–
10	*Jalkunds (Farm Ponds)*	–	179	808
11	*Span Pumps (Estimated)*	–	04	–
12	*Small Plot Drip*	–	–	101
13	*Samip Pump*	–	–	156

Source : *DHRUVA, Annual Report - 2002-03.*

Two significant measures, namely, credit provision for diesel engines through village Ayojana Samitis and Government sponsored watershed development for construction of permanent check dams covering wadi villages, will help accelerate water harvesting, leading to great push in wadi development.

3) COMMUNITY - HEALTH PROGRAMME

Community health programme ensures “capacity” to work in poor tribals for sustainable livelihood. This includes (a) prevention of health (b) mother and child health (c) primary treatment (d)

integration of traditional knowledge and (e) government linkages in immunization services and antenatal clinics. The latest progress recorded in the community health programme is stated in table - 5.12.

Table 5.12 : Community Health Programmes

Sr. No.		No.
1	*Total No. of Villages*	157
2	*No. of Village Health Guide*	152 (80 Female V.H.G.)
3	*Mother and Child Health Care Programme*	135
4	*Home Chlornation and Well Chlorination*	5750
5	*Primary Treatment at Village Level*	41049
6	*PHC*	1538
7	*Kitchen Garden*	8001
8	*Kitchen Garden By Antenatal Women*	1800
9	*Health Education*	2500
10	*Herbal Garden*	85 plots
11	*Eye Checkup*	3275
12	*Checkup for Physically Challenged*	37

Source : *DHRUVA, Annual Report - 2002-03.*

It seems that programme has been satisfactory implemented with 99% find utilization. There are no studies to evaluate the impact of such efforts on the health status of tribals. To what extent morbidity; despondency and infant morbidity etc., have improved is not known.

4) WOMEN-DEVELOPMENT

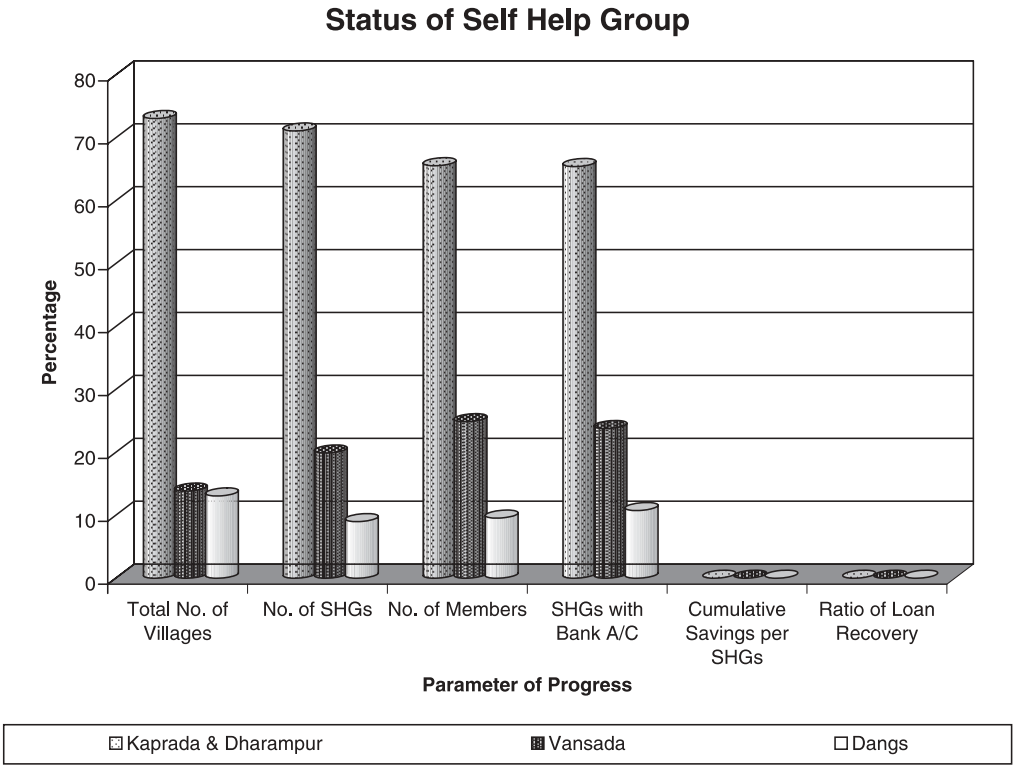
Integration of women in the development process is not only strategic to project implementation but it also help tribal women to achieve their social identity and economic self reliance, solidarity and confidence in the tribal development is implemented through creation of women SHGs that help women to organize themselves, develop habit of savings and promote self-help by internal group loans for family needs as well as income generating activities. Status of SHGs is shown in table - 5.13.

Table 5.13 : Status of Self Help Groups

Sr. No.	Parameter of Progress	Kaprada & Dharampur	Percentage of Total	Vansada	Percentage of Total	Dangs	Percentage of Total	Total
1	*Total No. of Villages*	95	73.08	18	13.85	17	13.08	130
2	*No. of SHGs*	300	71.09	84	19.91	38	9.00	422
3	*No. of Members*	2548	65.57	967	24.88	371	9.55	3886
4	*Average Members of SHGs*	8.49	0.00	11.51	0.00	9.76	0.00	9.21
5	*SHGs with Bank A/c*	231	65.44	84	23.80	38	10.76	353
6	*Bank A/c per SHGs*	0.77	0.00	0.28	0.00	0.13	0.00	1.18
7	*Cumulative Savings*	769322	61.72	405206	32.51	71905	5.77	1246433
8	*Cumulative Savings per SHGs*	2564.41	0.00	1350.69	0.00	239.68	0.00	4154.78
9	*Cumulative Credit*	766712	73.38	261578	25.04	16500	1.58	1044790
10	*Cumulative Credit per SHGs*	2555.71	0.00	871.93	0.00	55.00	0.00	3482.63
11	*Cumulative Loan Recovery*	572727	86.30	84143	12.68	6790	1.02	663660
12	*Cumulative Loan Recovery per SHGs*	1909.09	0.00	280.48	0.00	22.63	0.00	2212.20
13	*Ratio of Loan Recovery*	74.70	0.00	32.17	0.00	41.15	0.00	63.52

Source : *Derived from Reports of PIA.*

Chart - 5.8



Most notable feature of the progress of SHGs is uneven development in all indicators. Progress of SHGs in Kaprada and Dharampur is much higher than in Vansda and Dangs. Though, recovery rate is about 75%, less than the usual 90-95% in SHGs based micro finance.

Table 5.14 : Economic activities of SHGs

Sr. No.	Activities	Self Help Groups	No. of Women
1	*Wormy Compost Production*	271	1900
2	*Mango Nursery*	14	85
3	*Forestry Nursery*	78	825
4	*Dairy Husbandry*	02	55
5	*Small Plot Vegetable Cultivation*	27	76
6	*Preparation of Nutritional Food Supplements*	05	27
7	*Papad Making*	02	20
8	*Making Leaf Cups and Plates*	02	15
9	*Renting Out Chairs, Ornaments*	02	14

Source : *DHRUVA Reports, 2002-2003.*

The economic activity pattern as depicted in table - 5.14 exhibits the traditional style, skill and culture of women and families. More importantly, there is an assured buy back on account of the demand created by the Wadi Projects for wormy - composts, mango and forest nursery. This is an example of integration of women in development process that enables the women to achieve economic self-reliance.

Women SHGs have developed a new line of activity - collective effort for community development. An initiative was taken by the women in successfully organising international women day in tribal area, for the first time - 245 SHG members undertook tree plantation in Ashram Shala, members of 53 SHGs got involved in the monitoring of chlorination of community wells and home chlorination.

Another important activity of women development is the reduction of drudgery. The drudgery involves very hard tiring work with physical and mental health hazards. For example, fuel wood collection and fetching water takes up considerable time and energy.

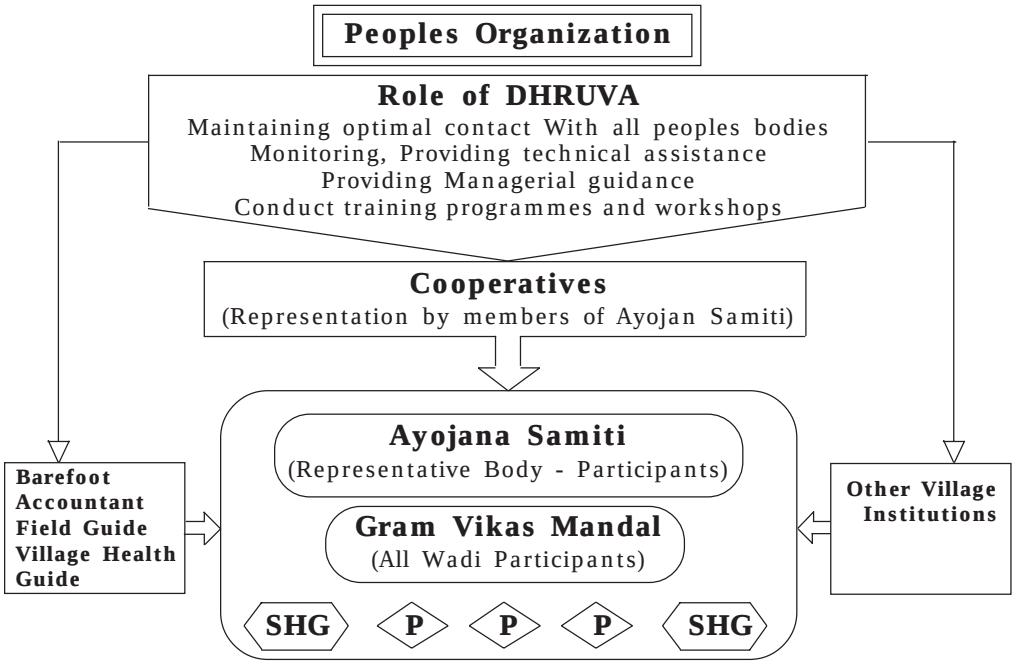
Appropriate technologies have been developed to this end, such as modified hand-pumps. Energy saving devices like portable stoves and pressure cookers are well accepted and adopted. This could be seen from the fact that more than 1000 women have purchased pressure cookers and using them. Some 700 women are using skylights to brighten kitchen space and installed non-reversible valves in HPs to deliver water near their homes (SAMIP), more than 250 households receive water at stand post close to their homes.

Thus, a new experience of development and real involvement of women has been developed.

5) PEOPLES' ORGANIZATION AND THEIR PERFORMANCE

Peoples' organization have been designed to promote meaningful and productive participation of local benecifiaries in project implementation and execution of the development plans: In order to encourage grass-root participation and local leadership, the role of peoples' organization is well defined in terms of enabling peoples' own development process to plan, organize and ensure the implementation of the programme to function as the local source for meeting of the financial needs of the people and to take developmental initiatives and providing linkages with other stake holding agencies including government bodies.

Flowchart - 5.1



The following table shows the status of Gram Vikas Mandal.

Table 5.15 : Status of Gram Vikas Mandal / Ayojana Samiti

Sr. No.	Particulars	Dharampur Kaprada	Vansda	Dangs	Total
1	*No of Ayojana Samiti*	155	16	17	188
2	*Members of Ayojana Samiti*	1996	174	159	2329
3	*Local Youth Field Functionaries*				
	I Field Guides	160	14	17	191
	II Health Guides	142	12	17	171
	III Local Accounts	161	14	17	192
4	*Cumulative Savings (Rs. in Lacks)*	53	1.18	3.58	57.76
5	*Cumulative Credit (Rs. in Lacks)*	130	–	–	130

Source : *DHRUVA, Annual Report - 2002-03.*

Some observations on the table are :

(1) Against reported total 391 villages, number of Ayojana Samitis are 188 (48%), there is a shortfall.

(2) Against the total reported households of 12827, members are 2329 (18%).

(3) Local functionaries at village level are less than total number of villages under the project.

In many case, these institutions have played a positive role. Thus, overall numerical progress is quite satisfactory.

6) COOPERATIVE INSTITUTIONAL ARRANGEMENT FOR PROCESSING AND MARKETING LINKAGES AND SERVICES

One of the most outstanding measures of success taken by BAIF is to establish marketing and processing institutions on cooperative basis right from the initial period of 1985, with some 3000 Wadi farmers enrolled as members of Vasundhara Cooperative. This cooperative, after its two decades of experience, not only acquired business competence and management capacity but also earned a brand name of “Vrundavan” in mango processing, with an

employment to 250 tribal youth. Vasundhara has made the following progress :

Table 5.16 : Turnover of Vasundhara Cooperative

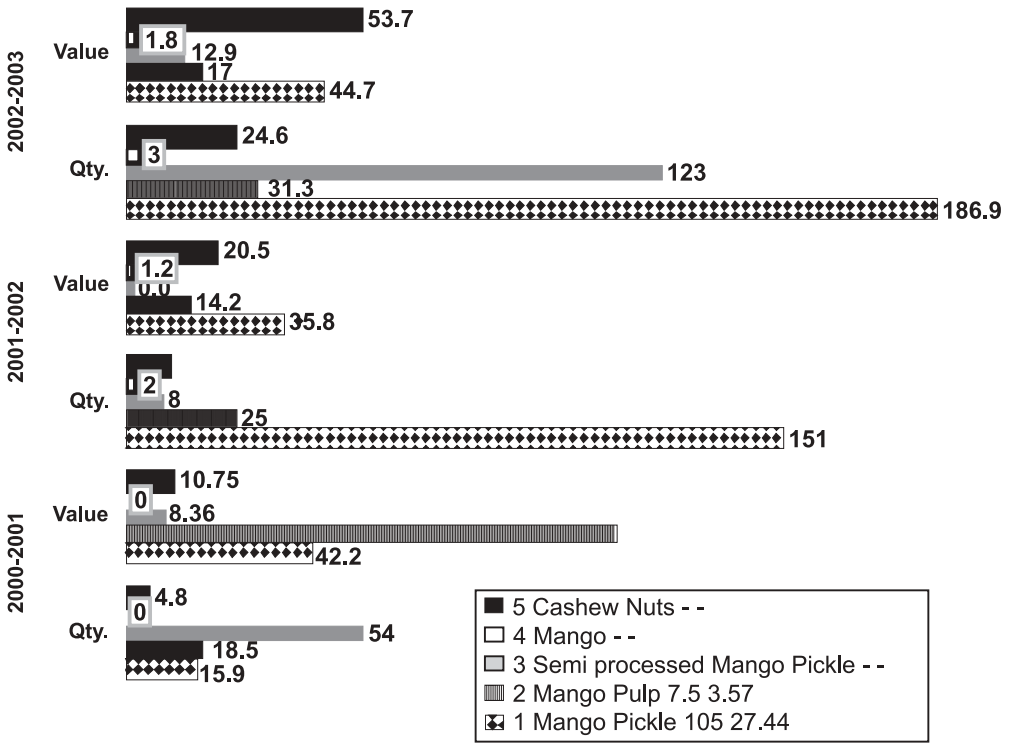
(Quantity in Tons, Value in Rs. Lakh)

Sr. No.	Particular	1999-2000		2000-2001		2001-2002		2002-2003	
		Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value
1	*Mango Pickle*	105	27.44	15.9	42.2	151	35.8	186.9	44.l7
2	*Mango Pulp*	7.5	3.57	18.5	13.3	25.0	14.2	31.3	17.0
3	*Semi Processed Mango Pickle*	–	–	54	8.36	08	0.8	123	12.9
4	*Mango*	–	–	–	–	2.0	1.2	3.0	1.8
5	*Cashew Nuts*	–	–	4.8	10.75	9.5	20.5	24.6	53.7
	Total		**31.01**		**72.61**		**72.5**		**130.1**

The fast progress is evident in growth of turnover in case of mango, cashew nuts and in total turnover.

Chart - 5.9

Turnover Of Vasundhara Cooperative



Encouraged by experience of Vasundhara Model, DHRUVA, has promoted a cooperatives, covering 144 villages in Dharampur and Kaprada. Some 70% Wadi farmers have purchased shares of worth Rs. 7.6 lakh. The cooperatives manage their affairs with the involvement of different Ayojana Committees who are on advisory and management committees. Decentralized cashew processing centers have been set up in 7 villages and about 121 landless workers trained to handle cashew processing, collection of raw mango and mango cutting/semi-processing was started in Mandva, Dixal and Karjun cooperatives. As much as 37 tones of mango and 120 tones of raw cashew was produced in 2002-03 at the village level. Reported turnover of decentralized units is as follows :

Table 5.17 : Decentralized Cooperative Cashew Processing Units

Sr. No.	Cooperatives	Villages	Raw Nut Processed (m.t.)		Employment (Persons)		
			2001-2002	2002-2003	Male	Female	Total
1	*Karjun*	*Karjun*	20.0	28.3	6	12	18
2	*Mandava*	*Mandava*	8.0	23.5	9	8	17
3	*Dixal*	*Gavashala*	8.7	29.1	9	9	18
		Chinchpada	–	5.0	9	9	18
4	*Sutherpada*	*Virakshetra*	5.4	18.7	3	15	18
5	*Pandhardevi*	*Pandhardevi*	–	8.3	5	12	17
6	*Tutarkheda*	*Sadadvera*	–	7.0	7	8	15
	Total		**42.1**	**119.9**	**48**	**73**	**121**

Source : *DHRUVA, Annual Report, 2002-03.*

Cashew nuts are sold to the Vasundhara cooperative and Vasundhara markets it through its established market channels. Cashew apples are used to produce juice, syrups, cattle feed etc. Some 12 mt of cashew apple was collected and 2 mt was dried, of which 1.5 mt was supplied to Vasundhara Dairy for cattle feed production and the rest supplied to CRS (Central Research Station, Pune). This is a remarkable effort to diversity into through appropriate processing of products.

7) CAPACITY BUILDING THROUGH TRAINING

With an objective of the promotion of awareness and building capacities, "Training" has been given strategic place in the programme. Training is meant for all stake holders - beneficiaries, Ayojana Samiti members, women members of the beneficiary households and landless households - in the form of regular training and workshops.

Total number of training programme organized up to 2000 was 140 with 838 participants. The details are as summarised below :

Table 5.18 : Training and Workshop for Capacity Building

Sr. No.	Training	Particular	No. of Training	No. of Beneficiaries		
				Male	Female	Total
1	*Skill Development*	*Accounting, Tailoring, Oil Engine and HP Repairing, Mushroom etc.*	33	270	83	353
2	*Women in Development*	*Saving, Credit, Personality Development*	19	102	358	460
3	*Health*	*Internal Area, Water Purification; Immunization*	15	199	73	272
4	*Agriculture*	*Crop*	06	149	50	199
	Horticulture	*Production, Mango Groping, Wormy Compost Fertilizer*	–	–	–	–
5	*Watershed Development*	*Water Conservation and Soil Conservation Techniques*	08	176	31	207
6	*Workshops*	*Peoples' Organizations, Wadi Programmes, Women Development*	05	423	325	759
Total			**86**	**1319**	**920**	**2250**

Source : *DHRUVA - 2003.*

Though the programmes address a variety of developmental aspects, skill development is given a priority. Similarly, women development has also receives adequate importance.

Though DHRUVA has not done any follow-up studies on training, one observes in the field that it has worked very well in HP repairs,

wormy-compost, water purification: kitchen garden, mango grafting etc. One can observe large number of hand pumps working due to HP repair training in this area due to this kind of training.

An activity of mango grafting has become a household activity. This training was started in 1983-84 out of Wadi needs. Today, assured market is the major incentive. By little investment, a family can make 5000-10000 grafts in the season and along with local varieties. Another significant outcome of training is local technical services provided to village Ayojana Committee by trained local technical services provided to village Ayojana Committee by trained local youth. This has also improved the quality of management and at the grass root level.

8) CREDIT FOR LIVELIHOOD

"Credit" related programme of tribal development, though unusual, has distinguished features as compared to ordinary bank finance or DRDA based development finance. The major distinguished features are :

(a) This programme is for creating a livelihood opportunity beyond Wadi and to promote enough regular income to enable the progressive produces to cross the poverty line.

(b) It is an instrument to sustain Wadi project even after the end of the project where by grant support will be withdrawn.

(c) It is regarded as "Sahbhagi Vikas Yojana" in the sense that it is totally managed by peoples' organization and local barefoot accounts and based on participants' contribution i.e., saving.

(d) The programme focuses on need based schemes that are introduced through Ayojana Samiti.

(e) Priority areas of finance, terms and conditions and methodology of the operation are developed by people's organization.

(f) It is not only support to Wadi farmers but also to support their cooperative with working capital.

(g) This credit involves no element of subsidy. As a result it is found costlier, but the process of its implementation is soft and strait enough to attract the beneficiaries.

(h) Implementation is autonomous and governed by Gram Vikas Mandal and local barefoot accounts who not only identify the borrower's activities economic and livelihood needs, for which credit support is needed, but also record of all relevant documents of credit programme and also help recovery process.

(i) It is a unique model of "micro finance" system developed by beneficiaries themselves.

The initial model was based on 75% grant, 25% credit but latter credit component was dropped in favour of 100% grant. However, with a view to develop it and to sustain it after end of 10 years project period, credit support programme was envisaged with liberal support of refinancing facility of NABARD. The credit component was introduced in 1998-99 and the restriction of Rs. 10000 per family was removed, credit is given to persons who need it without any limit on the amount for different purposes. Technical support of NABARD is visible as unit costs, developed by NABARD, are used for assessing the credit needs. In view of the strategic role of the "Ayojana Samiti" the credit support programme got its momentum quite late as the these organizations took time to get rooted at the grass root level.

DHRUVA in consultation of NABARD has identified various schemes based on the beneficiary needs where some of grants are also allowed - for example: 20% grant for oil engine and 50% grant in case of processing equipment. Broad purposes of credit are identified as follows :

(a) Farm implements

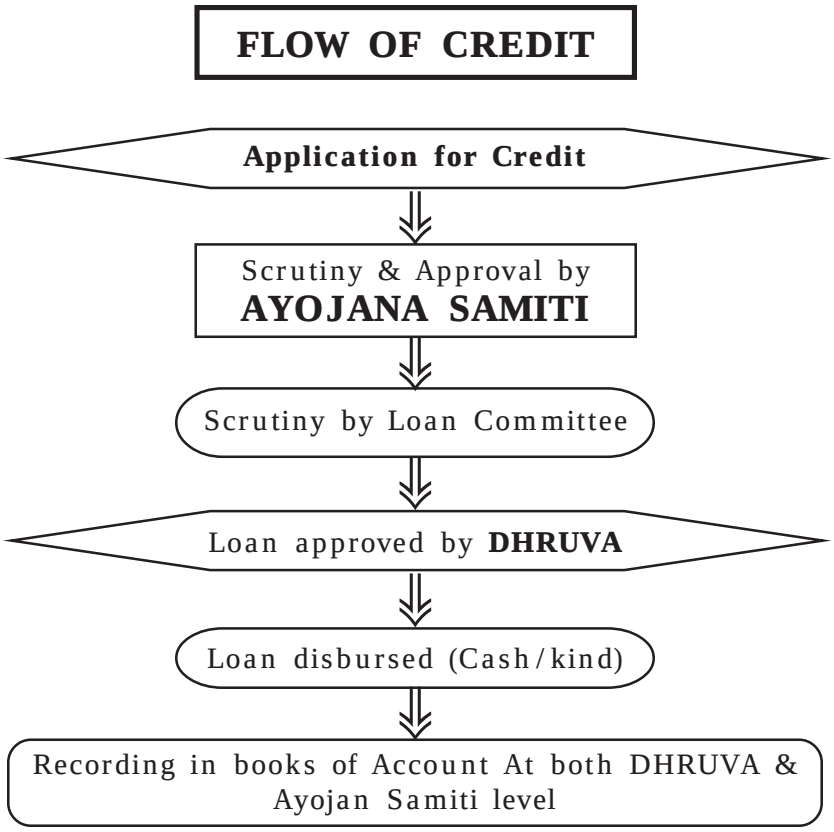
(b) Water resources development - pumps, pipelines, pot drips, lift irrigation.

(c) Development of farm activities - improved agriculture, nursery, fertilizers, wormy-composed and livestock.

(d) Development of non-farm activities - micro enterprises, agro-service centers through (Gram Vikas Mandal and cooperative), drudgery reduction.

(e) Working capital for decentralized processing cooperatives for purchase of Wadi production, the flowchart of credit disbursement system explains its methodology of work.

Flowchart - 5.2



The cost of credit is related to service charges only: NABARD provides funds at the rate of 9% to DHRUVA provides this credit funds at the rate of 12.5% (assuming 3.5% service charges) and Ayojana Samiti provides loan to its members at the rate of 15% (once again charges 3.5% service charges). Thus, NABARD loan is made available at 6% transaction cost borne by beneficiary. This sounds certainly quite high! And at least it could not be regarded as "soft loan" at all for poor tribals.

The progress of credit disbursement is indicated in the following table:

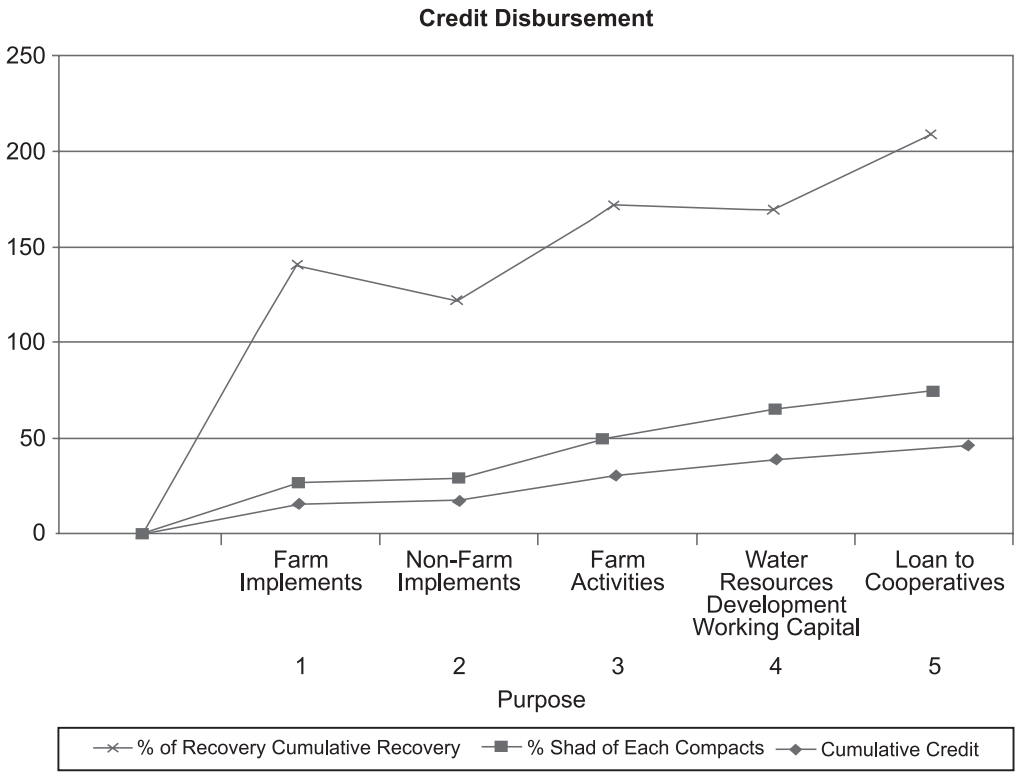
Table 5.19 : Credit Disbursement

(Rs. in Lakh)

Sr. No.	Purpose	Cumu-lative Credit	% Shad of Each Compacts	Cumu-lative Recovery	% of Recovery
1	*Farm Implements*	14.85	10.83	14.81	99.73
2	*Non-Farm Activities*	16.08	11.73	12.95	80.53
3	*Farm Activities*	28.47	20.77	24.67	97.19
4	*Water Resources Development Working Capital*	36.28	26.47	28.01	77.20
5	*Loan to Cooperatives*	41.36	30.18	39.68	95.93
	Total	**137.04**	**99.98**	**120.12**	**87.65**

Source: Review Report - January, 2004

Chart - 5.10



On the basis of the progress table, one observes

1) Reported utilization of allocated credit fund by NABARD is just 2%, indicating the slow space of the programme.

2) Almost 30% of the finances are relatively in organized institutions i.e., cooperative and hence recovery is best ensured i.e., 96%.

3) Non-farm activity related credit performance is relatively much less than farm activity finance as the programme is predominantly agro-based and the SHG related activities have yet to show reference for micro-enterprises.

4) The recovery rates are not 100% in any case. However, farm implements having the 'grant' support have shown highest recovery rate, next is cooperative sector, while overall recovery is 87% which, appreciable, is still less of 95-100% recovery in case of normal micro finance.

5) Thus, one could conclude that (a) "credit absorption" capacity has yet not developed among tribals (b) credit is costlier than anticipated (c) there is a policy of "safe finance" (d) story of non-starter of non-farm finance, as in other areas, is evident in this case also.

5.4 CONCLUDING NOTE

The analysis of the progress of the project discussed in term of the financial as well as physical indicators based on the secondary data provides a *satisfactory performance*. We may summarise the main observations as :

a) Project management and fund utilization has been done in an efficient manner. With less than the anticipated cost, more households are covered under the project within the same budgetary provision - 13000 units are covered out of the grant of Rs. 10000 per unit and average cost wadi is also less, Rs. 19000 against stipulated Rs. 20000-22000.

b) Overall fund utilization of around 67% of the budget is also quite satisfactory.

c) Physical performance in terms of the coverage of the villages and beneficiaries has exceeded the project targets.

d) Wadi plantation has been so well managed that overall survival rate of 85% is achieved, covering all clusters.

e) Production/processing has recorded remarkable continuous growth.

f) Soil conservation and water conservation development works have also picked up well in the 2003-2004 - 80% utilization of funds and 84% of the physical work coverage recorded. Soil conservation work have been done well with credit provision for water resource, development work has been started, but utilization of funds is less than satisfactory (30%).

g) Community health programmes have already picked up in 157 villages with almost 99% fund utilization, with major physical achievement.

h) Women development through SHGs has covered 73% of Kaparada-Dharampur but in Vansada and Dangs work is less satisfactory. Economic activities have taken up well but real non-farm economic activities are yet to emerge.

i) Peoples' organization through the grassroot institution has taken up in the sense that as much as 188 villages and 2329 participants are covered by Ayojana Samiti.

j) Decentralized cooperative processing units are doing well, quantum of processing, employment of landless labour and turnover has increased in case of all the 7 units.

k) Six different types of training cover large number of beneficiaries (women, SHGs and landless) who have shown continuous interest and hence, gained from the programme. Utilization of the developed skill is found in the economic activities followed by the beneficiaries (mango grafting, wormy compost, etc).

l) Credit for livelihood programme is a key tor the sustainable development of the tribals, even after the end of the project. Sahakari Vikas Yojana has been well established in terms of management and structure and is familiar among tribal beneficiaries but the credit disbursement is yet to take momentum as even 22% fund allotted for credit is not utilized. Review of interest on the loan may help in the

further, along with better initiatives in opening new viable non-farm micro-economic activities, sustainable to present economic environment.

m) Overall conclusion emerging from the analysis is very clear and positive; with appropriate measures, shortfalls in financial and physical targets could be easily overcome, as the overall performance is quite sound, sustainable and in accordance to PPR, i.e., Programme Preparation Report.

CHAPTER – 6

IMPACT ASSESSMENT OF WADI PROJECT

6.1 Introduction

The Present chapter is an attempt to understand and assess the economic social and development changes in the tribal project area and its beneficiaries. Though, substantial and sustainable impact may be realized at the end of the project, we may broadly analyze the available findings and observation from the various sources of the studies such as The Base Line Survey (A.F.C. 2000). Ist evaluation study (A.F.C. - June, 2001) and some parts of our on going study (Dilip Shah - 2004).

Our impact analysis has concentrated in the fame work of the Nine parameters along with the changes in the process of development through the major changes in quality of life and development environment as well as developmental positive outlook among tribal beneficiary; the impact related parameters considered for the present analysis are as follow :

1] Livelihood related impact
2] Agricultural development related impact
3] Migration related impact
4] Wadi related impact
5] Quality of Life related impact
6] Environmental impact
7] Women development with specific reference to gender issues related impact
8] Development environment with development Ethos and work culture.

Each of these parameters is discussed in the context of the promotion of "Sustainable development of Tribal Beneficiaries".

1. Livelihood Related Impact:-

The livelihood related impact of the project is directly related to the improvement of the tribal income holding scale in comparison of the pre-project period as documented in the following table - 6.1 :

Table 6.1

SOURCE	LANDLESS HOUSEHOLD		MARGINAL	SHARE	MEDIUM AND LARGE FARMERS	TOTAL
			FARMERS			
Cash receipts sale of produce of crops and livestock	FES BLS	4.2 6.6	10.5 9.1	17.4 11.6	21.9 15.5	13.2 8.9
Income from agri / Non-agri	FES BLS	38.9 17	49.1 17.6	47.3 19.6	59.4 8.7	48.7 17.8
Migration	FES BLS	56.9 76.4	40.7 73.3	35.3 68.9	18.7 74.0	38.1 73.3
Total	FES BLS	9329 4884	9490 6035	10678 6976	1675 210639	10470 6312

Source : First Evaluation Baseline and First Evaluation Studies -2002.
FES = First Evaluation Study, ***BLS*** = Base Line Survey

Total income generation and structure of sources of income : -

Total income per house per annum was recorded at Rs. 10470, which was reasonably good as compared to baseline income of Rs. 6312 i.e. 60.28% higher level. In our sample study also we find Average Annual Income around Rs.11,109.

If we look at the income data by land holding size classes, we find that landless and marginal producers have less than the average level of 10,470 i.e. Rs. 9327 and Rs. 9490, though gap is quite marginal i.e. 11% this gap was much wider in base line period of 23%. The position of small farmer was only slightly higher than average level income of Rs. 10678 against average of Rs. 10470. The relative differences of average income per house are of the same tune in our second evaluation also.

The analysis of the structure of sources of income recorded in same table makes an interesting scenario of change achieved between years of 1995-2000 (five years) of the project.

The source wise share of income shows the following share in terms of % of total income :

The table shows very interesting changes in the sources of income by classes period.

1. The most important is the migration income. It was highest and dominant source in case of all classes in baseline period. While in first evaluation period it has very significantly reduced in case of all classes but the most sharply declined in case of medium and large farmers.

2. Another interesting point next to migration income is that wage income but local agricultural and non-agricultural work is now more significant then marginal income indicating better remunerative opportunity at the doors of the respondents.

3. Cash receipts from sales of produce of crops and live stock products has "significantly" increased in case of small, marginal farmers and large farmers in comparison of the past. However, the income from this source depends upon "marketable surplus", perhaps the producer could not produce enough to get adequate marketable surplus.

4. It is very remarkable and relevant to note about the cash receipts from sale of "Wadi crops" like mango, cashew nuts and fruit and other horticulture crops.

It must be noted as one of the most positive impact that "The cash receipts from sale of horticulture and tree crops (Mango, cashew nut, fruits etc.) accounted for about 2/3rd of total cash crops from sale of all crops, like Mango and cashew nut, "BANANA and water melon are the other coming up fruit crop in the area. Over all cash receipts from sale of crops per household for the four categories of households is shown in the following table - 6.2, which shows the crop wise and class wise scenario for households in comparison of baseline situation.

Table 6.2 : Cash Receipts from the Sale of products

(As per Hectare)

Sr. No.	Category of Farmers	FIRST EVALUATION			BASE-LINE	CROPS PER HECTARES	
		Field crops	Wadi crops	Total		% Share wadi crop	% change between Ist & IInd
1	Landless	57	122	179	151	68%	18%
2	Marginal	51	529	580	301	91%	48%
3	Small	305	918	1223	406	75%	200
4	Medium and large	1924	1039	2963	1497	35%	98%
	Total :	***297***	***616***	***913***	***356***		

It may be noted that in case of all classes, the per hectare sales receipts are far higher in case of Wadi crops than field crops. It is largely due to very high marketable surplus for cashew nut which was reported by 70% of the households who reported the sale of this crop on account of household consumption, which needs marketable surplus of traditional and subsistence production.

2. Agricultural Development Related Impact

Agricultural development is crux of the actions for tribal development as agriculture has to be efficient and adequately income generating source : We have discussed this parameter in terms of changes in the cropping pattern and crop productivity. The cropping pattern leading to commercial crops and increase in their productivity are important factors playing role in development of poor producers to achieve adequate and sustainable income. If the cropping pattern in the project area revealed the dominance of traditional crops like paddy, nagli and pulses (Tur and urid) and to some extent jowar oil seeds and sugarcane, but with emergence of Wadi component the area under horticulture crops has acquired a significant share of 20% of the total area under cultivation under these crops Mango/Cashew nut yield per acre measures the crop productivity which shows positive change mostly in the owned land + wadi land than forest/revenue land. This shows the role of incentive on their own land/wadi the details are shown in the following table. Yield of major crops per household (kg per acre)

Table 6.3 : Crop Productivity

CRPS	OWNED LAND		WADI		FOREST		OVERALL AVERAGE	
	FES	BLS	FES	BLS	FES	BLS	FES	BLS
PADDY	337	327	379	2	239	247	315	311
NAGLI	263	278	273	–	144	216	278	254
PULSES	108	87	114	–	88	42	87	78

*The average yield for other crops including horticulture is not attempted.

It should be noted that there are not very remarkable and appreciable changes in the yield performance. Perhaps, it is too early to assert and expect changes on this front which ensured the real sustainable livelihood.

3. Migration Related Impact

Poverty induced Migration is one of the obstacle to tribal development. Reduction or elimination of migration therefore, could be one of the standard measures of tribal development. Process of real tribal development could only be possible once the tribal families gets stabilized permanently on their own land or Wadi hence one of the objective of the project is to reduce the Incidence of migration. The details of migration pattern, period, and nature of activity and contribution of migration income provide the evidence of the positive impact of the project.

Some interesting points of migration related particulars are as follow :

I) Overall 33% of the sample adult population had resorted to migration.

II) The average duration of migration ranges from 43 days to 65 days for males and 30 to 50 days for females.

III) The average earning per household worked out to Rs. 3986 per hour i.e. with substantially high average for the landless (Rs. 5307) per household and least in the case of medium/ large targets i.e. Rs. 3136.

IV) Migration pattern records 'very low dependence' on migration in case of landed farmers and landless. This is evident from the fact that out of 33.2% migrating population. The ratio of migrating people in case of landless is 41.4%, marginal farmers (35.6%) and small produces (18.1) and large farmers (21.6%).

V) A comparative scenario of Ist evaluation period with baseline survey records the significant reduction of migration.

a) The incidence of migration of women declined sharply from 20% in the baseline survey to 11.8% in Ist evaluation period This is perhaps Vavly effect.

b) The landless households continue to depend heavily on migration without much reduction in their incidence.

c) The income per households from migration to medium and large farmers is lowest in the current survey Rs. 3136 as compared to Rs. 7870 per household in the Baseline survey.

Thus, slowly but in a sustained way 'Wadi' based project have started contributing positively in promotion of income and reduction of poverty induced migration in case of those who are involved more intensively in Wadi.

I) SAVINGS - INVESTMENT AND CREDIT :

It is quite early to expect the substantial saving from a household struggling for subsistence however, due to development of SHGS and positive institute arrangements in the project 71 households out of 568 household i.e. 12.5% reported savings ranging from Rs. 375 to 29000, however, only 27% households reported that they deposited the amount in the Bank. The use of savings investment was quite rare but savings are found in the use of construction of houses or upgradation of houses etc. Another use of saving was social customary to meet need of marriage i.e. Gold.

Institutional credit accesses other than VAS and SHGs are still very insignificant. It is reported the total number of households who had availed of credit was 52, which represents 10% of total sample households. The average amount of borrowing works out at Rs. 454 per household and Rs. 4960 per reporting household.

The sources of credit are still dominated by money lenders and others including friends and relatives.

Table 6.4 : Credit sources and Access to Beneficiaries

	LANDLESS HOUSEHOLD		MARGINAL FARMERS		SMALL FARMERS		MEDIUM FARMERS		TOTAL		AVERAGE PER REPORTED HOUSEHOLD
	NO.	AMT.	NO.	AMT	NO.	AMT	NO.	AMT	NO.	AMT	
COMM. BANK	–	–	–	–	–	–	–	–	–	–	–
CO-OPERATIVES	–	–	–	–	–	–	–	–	–	–	–
RRB	1	100	2	25.0	3	35.5	–	–	6	70	11.8
MONEY LENDERS	2	7.9	18	43.2	1	5.0	1	5.0	22	61.1	2.8
VAS/GVM	3	1.2	3	17.0	1	12.0	1	12.0	8	42.2	5.3
OTHERS	1	4.7	11	18.2	1	10	3	51.2	16	841	5.3
TOTAL	7	23.8	34	103.4	6	62.5	5	68.2	52	257	5.0

Available study shows that out of 52 cases there were almost as many as 22 case of borrowing from money lenders i.e. almost 50% dependent on money lenders. Other sources of credit included non institutional sources; and RRB, Cooperative and VAs/GVM. However, the average interest charges was 12% in case of RRBs while in case of VAs/GVM such charges were as high as 15% though less than commercial bank interest charges i.e. 18%.

4. Wadi Related Impact

Wadi has most dominating "Anchor" role in Adivasi Development. We had tried to know the beneficial impact of Wadi from our sample respondents. The following is the discussion based on the data collected from 625 respondents of 25 villages in our going study (Dilip Shah - 2004).

First of all we had attempted to know the source of information to sample respondents as stated in the table - 6.5 that 75% of the beneficiaries stated that the main source of the information NGO / Co-Op. including DHRUVA itself. Another major source was their friends and relatives, while formal information channels did not play much role i.e. only 5%.

Table 6.5 : Source of Information about Wadi Programme

Particulars	Total Number	Percent (%)
Government	14	2.24
Friend and Village people	103	16.48
Television and radio	29	4.64
NGO and Co-operative Organization	471	75.36
Others	8	1.28
Total	625	100

Over all size of the Wadi was stated below one acre with small variation of 0.2 acres. This is consistent with concept where Wadi size is given to 1 acre (table - 6.6).

Table 6.6 : Size of Wadi

Marginal		Small		Medium & Large		Total	
Total	Average	Total	Average	Total	Average	Total	Average
203	0.96	303.5	0.96	98.5	0.98	605	0.96

As expected the quality of land for wadi was almost like waste lands. According to table - 6.7 as much as 81% of the land under Wadi was 'un-irrigated plots'; barren land was hardly 1%. This speaks about the quality of land which is understandable as the wadi development is also a wasteland development programme.

Table 6.7 : Quality of Land under Wadi

	Total Number	(%)
Irrigated	108	17.28
Non-Irrigated	510	81.6
Barren	7	1.12
Total	625	100

With the view to capture beneficial positive impact, we attempted to know whether Wadi producers could expand Wadi size table - 6.8 5.12% beneficiaries were successful to expand the size of wadi but 94% denied such change. As wadi around 1 to 1.5 acres of land is a conceptual characteristic of the project. The size was not likely to be change in near future.

Table 6.8 : Expansion of Wadi Acre

Total	Number	(%)
Yes	32	5.12
No	593	94.88
Total	625	100

Wadi beneficiaries described various benefits related to economic, technological and capacity building.

As stated in table - 6.9 subsidized / free inputs assistance in the form of fertilizer, pesticides and equipments are available to all producers. table - 6.10. At least 98.72% sample beneficiaries

reported positively about the receipt of such benefits what factors have played role in exclusion of 2.3 % of beneficiary is not explained.

Table 6.9 : Financial Assistance under Wadi Project

Received Programmes	Plant (no.)		Fertilizers (Kg.)		Pesticide (Liter.)		Instru-ments (no.)		Others	
	HHs	Per-cent	HHs	Per-cent	HHs	Per-cent	HHs	Per-cent	HHs	Per-cent
Yes	616	98.56	616	98.56	617	98.72	607	97.12	35	5.6
No	9	1.44	9	1.44	8	1.28	18	2.88	590	94.4
Total	**625**	**100**	**625**	**100**	**625**	**100**	**625**	**100**	**625**	**100**

Table 6.10 : Benefits due to Wadi Project

Benefits due to Wadi Project	HHs	Percent
Received Employment	568	90.9
Stopped Migration	50	8.0
Received New Agricultural Technology	1	0.2
Water Conservation Activities	2	0.3
Soil Conservation Activities	4	0.6
Total	**625**	**100.0**

Another great component of the programme was that of capacity building by specific training. It was helpful to improve the implementation of the Wadi. We could observe from the following two tables - 6.11 that majority producers 76.86% modules have taken the one or another kind of training related to wadi; almost quarter of the wadi members have remained without this benefit as it is not compulsory or personal circumstances may not be appropriate to spend time on training. Economic burden of the training is most unlikely as it is a free and a part of the package of the programme.

Table 6.11 : Training Benefits

Received Training	HHs	Percent
Yes	480	76.8
No	145	23.2
Total	625	100

More important is the extent of the utilization of the training we enquired about this aspect and it was reported by the beneficiaries as shown in table - 6.12 that as much as 66% of the beneficiaries said that the training was utilized in practice. 3.84% refrained from reply but 30.4% clearly expressed their inability to utilize training. Thus, training utilization is less than desirable level. 1/3 of the training need some kind of support to utilise the training.

Table 6.12 : Training Utilization

Utilized the Training	HHs	Percent
Yes	411	65.76
No	190	30.4
N.A	24	3.84
Total	625	100

Various technological adoption and action in 'Wadi' development reflect the role of the training also. We attempted to know how do the modern Watershed developments techniques are being recognized and adopted in the Wadi project. We particularly looked in to the SOIL CONSERVATION and WATER CONSERVATION techniques and actions. The following table - 6.13 / 6.14 provides the resulting scenario.

Table 6.13 : Type of Soil Conservation Works under Wadi Project

Type of Soil Conservation Works	HHs	Percent
Bund Construction	536	85.76
Leveling of Land	50	8
Nala and Gully Plugging	24	3.84
N.A	15	2.4
Total	625	100

Table 6.14 : Water Conservation Activities under Wadi Project

Water Conservation Activities	HHs	Percent
Well Repairing	127	20.32
Pond formation	88	14.08
Nala and Gully Plugging	188	30.08
Check dams	56	8.96
N.A	166	26.56
Total	625	100

It is a matter of great significance that as much 96% farmers have undertaken one or another measure of soil conservation. However, out of various measure such as Bund construction; leveling of land, Nala and Gully plugging. With 85.76% bund construction actions are widely followed. Similarly in the area of water conservation as much as 69.92% respondents said to have adopted the water harvesting techniques (table - 6.15) unlike the soil conservation type of water harvesting are valid, relatively popular check dams in recent times in the case of wadi project are least adopted (8%) 50% work is done with reference to well repairing (20.52%) and nala and gully plugging. About 15% beneficiaries developed ponds in their wadi/farms.

Table 6.15 : Water Conservation Measures under Wadi

	HHs	Percent
Yes	437	69.92
No	178	28.48
N.A	10	1.6
Total	625	100

An impact of assistance; training and technology is visible in the actual 'Core' part of wadi development. The tables - 6.16 related to wadi plantation and their survival rate as well as marketable surplus generated shows the clear benefits drawn by poor producers most important fact is that in case of all the plants survival rate is very high above normal standards. It is interesting that higher survival rate of 90.33% in case of 'Kaju' and 86.03% in case of mango are due to special measures of protection the plants. However, relatively low survival rate in case of forest plants are quite difficult to understand. In any case, these survival rates are close to the general survival rates of 85% claimed by BAIF (DHRUVA) in their annual report (2003).

Table 6.16 : Plantation and Survival Rate of Wadi Plants

Plant	Total No. of Plants	Value of Plants	No. of Survived Plants	Survival Rate	Replaced Plants	Food Providing Trees
Mango	12934	14297	11127	86.03	1835	7364
Cashew	23650	13255	21372	90.37	2496	16675
Forest trees	390052	71143	245365	62.9	16539	125
Others	300	3	85	28.33	85	40
Total	426936	34669	277949	65.1	20955	24204

Similarly, these wadi plants are meant for commercial purpose and hence higher marketable surplus are not only expected but also absolutely essential to generate income for the beneficiaries. The 87.55% marketed surplus in case of mango and as much as 95.15% of marketable surplus in Kaju are quite appreciable.

Economic benefits drawn out of the wadi project are clearly evident from the responses of the sample respondents. 90.9% of the sample respondents have said to have received some kind of employment at least 18% of the respondents have reported that they stopped migration for job. The pattern of employment days and average amount of income generated by various wadi related activities are documented in table - 6.17.

Table 6.17 : Employment and Income received during the Wadi Programme

		Total	Per HHs
Filling of Fertilizer	Days	1620	2.59
	Amount	58603	93.76
Plowing	Days	3015	4.82
	Amount	103463	165.54
Surplus	Days	1097	1.76
	Amount	39887	63.82
Green Mulching	Days	855	1.37
	Amount	31442	50.31
Goding (land)	Days	2583	4.13
	Amount	106591	170.55
Dry Mulching	Days	889	1.42
	Amount	33985	54.38
Cleaning of Wadi	Days	2897	4.64
	Amount	106140	169.82
Construction	Days	13788	22.06
	Amount	484485	775.18
Total	Days	26744	42.7904
	Amount	964596	1543.354

It shows that on an average due to various stages of work involving actions as filling up of fertilizer; plowing; of green mulching; goding of land; dry mulching; cleaning of wadi; constriction etc. on an average 42 days work and Rs.1543.0 made available to each of the house holds.

Thus, Wadi project has generated noteble impact in terms of economic gains and technological transformation of waste land in to Wadi.

5. Quality of Life Related Impact

We have attempted to assess the quality of life in term of some specific indicators. These indicators include the following:

a.] Food security
b.] Improved consumption basket
c.] Housing and Sanitational facility
d.] Adequate safe driving water
e.] Health Status and family planning

a.] Food security :-

Improved food consumption is well captured in our study also. The following table - 6.18 shows the clear change in quality and value of average consumption food and food related items in case of all the class with degree of variation. It provides an evidence of

Table 6.18 : Food Security

Before wadi	Marginal		Small		Medium & Large		Total	
	Aver-age (kg)	Aver-age (Rs)	Aver-age (kg)	Aver-age (kg)	Aver-age (kg)	Aver-age (kg)	Aver-age (kg)	Aver-age (kg)
Food	1.14	9.76	1.16	11.17	0.98	9.83	1.12	10.48
Vegetables	0.52	5.02	0.48	4.97	0.48	5.29	0.49	5.04
Milk	0.01	0.25	0.01	0.23	0.02	0.30	0.01	0.25
Oil	0.23	4.74	0.21	5.18	0.22	4.93	0.22	4.99
Fruits	0.00	0.08	0.00	0.02	0.06	0.06	0.01	0.05
Sweets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Others	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
During wadi project								
Food	17.65	18.28	14.94	15.84	3.34	13.81	14.00	16.34
Vegetables	10.04	9.33	35.40	7.93	7.18	7.91	22.37	8.40
Milk	0.13	0.44	4.46	0.43	5.03	0.65	3.10	0.47
Oil	11.00	12.50	23.81	8.06	16.48	7.94	18.33	9.53
Fruits	0.96	0.80	3.50	0.81	3.01	1.42	2.57	0.90
Sweets	0.05	0.05	0.00	0.03	0.01	0.05	0.02	0.04
Others	0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.01

qualitative improvement of the quality of life also. The "food in security" is not usual phenomena even latest 56th NSS data has recorded 6% rural poor households suffering from "chronic poverty" where they could not get their two meals per day even V.S. Vyas and others had observed in Dharampur area families suffering from hunger as much as 18% in 1980's (Vyas and others, 1989). In first evaluation study the sample households were specifically asked "whether they had to go without any means for some days because of want of food and on the days they had food whether they could get two meals per day, the general response was indicating ZERO FOOD INSECURITIES (AFC - 2002, PP.70).

It records clearly the substantial change in the quantum of food items as well as quality of food items and those changes are recorded significantly in case of all classes of sample respondents with some variations.

Improved consumption basket :-

It is quite known that with improved level of income consumption basket of consumer get changes in the favor of those items of better quality and standard of living. Table - 6.19 documents the broad positive changes in dictating the improved consumption basket of the sample beneficiary.

Table 6.19 : Improved Consumption Basket

Consumption Basket	Marginal	Small	Medium & Large	Total
Food	263.22	252.04	220.60	250.77
Milk / milk products	13.98	11.80	4.00	11.28
Vegetables	129.37	121.91	114.00	123.15
Oil	134.90	134.23	144.65	136.12
Sugar	70.02	37.82	39.42	48.89
Fuel	2.71	3.27	0.00	2.56
Electricity	34.69	52.57	59.99	47.75
Tobacco and other exp.	21.67	21.51	15.03	20.53
Clothing	286.93	378.00	225.15	322.94
Medicines	84.38	130.44	119.20	113.17
Education	50.81	72.89	117.40	72.59
Social / Religious Exp.	41.14	62.57	72.30	56.93
Tour	44.25	70.27	95.43	65.55
Entertainment	0.80	1.05	7.50	2.00
Others	0.96	1.46	0.32	1.11

Source : Field Study Survey.

A relative reduction in the percentage of food expenditure and rise in the non-food consumption items and other items shows the improving quality. Such changes are observed in the table - 6.20, which records the percentage expenditure on food grains and other items.

Table 6.20 : Percentage Expenditure on Food Grains and Other Items

Sr. No.	Category	Food Grain		Regular Items		Other Items	
		ES	BS	ES	BS	ES	BS
1	Landless Farmers	27.7	40.1	26.8	18.3	45.5	41.6
2	Marginal Farmers	21.0	27.9	28.2	19.5	50.8	52.6
3	Small Farmers	15.4	18.2	28.6	23.8	56.0	58.0
4	Others Farmers	9.2	12.7	28.4	25.4	62.4	61.9
	Total	18.8	25.2	28.1	20.9	53	53.9

ES : Evaluations Studies **BS** : Baseline Study

Some observations based on the table are worthwhile to catch the positive change in the favor of quality of life.

- It was reported that prior to the project "All the households wherher marginal or large were living on subsistence.

- The consumption of milk and product was almost absent in the intake of their daily food. Meat, fish were reported consumed (Occasionally) by 36% families only.

- Relative reduction in food consumption (%) form 25% to 18% helped in boosting consumption of non-food items.

- Despite the fall in % of consumption expenditure on food, two meals to adults and that nutrious food and three meals to children also could be managed in the short project span.

Thus, by and large pattern of change in consumption basket indicates definitely show changes towards better living.

Our sample study shows that so far as urbanite durables have concerned radio (35%); wall clock (30%) and cycle (28%) were the only items reported by sample respondents.

b.] Housing condition :-

Housing condition is the first step in indicating the better quality of life, as senitational security is also associated with it. Available data from our sample have been shown in the table - 6.21.

Table 6.21 : Status of Housing / Sanitation

	Marginal house-holds	Small house-holds	Medium and Large	TOTAL
Separate kitchen	80.95	68.89	56	70.88
Bath room	7.62	–	–	–
Toilet	1.43	2.54	4.0	2.46
Separate place cleaning utensils cloths	22.38	23.49	29.0	24.0
Separate cattle shed out side the house	74.29	72.70	57.0	70.72
Separate drinking water facility	38.57	43.49	65.0	45.60
Electricity	39.52	44.76	40.0	41.0

Source : Field Study-2004.

The majority sample beneficiaries i.e.71% have 'kuchha' houses only. Hardly 2.46% toilets and 1% have bathrooms. However, in case of traditional society even with increase in income on account of traditional culture housing condition and sanitation are likely to be improved only slowly.

We can see slow process of improvement in area of quality of living. Most important indicator do give us very discouraging picture i.e. toilets and bathroom but traditional culture takes time to change even after better income levels achieved. Yet process has already begun, there are at least two or three indicators of positive change in substantial manner for example 70% of household have separate kitchen; separate cattle shed (76%) and separate drinking water facility (70%), electricity as an important facility also considerable though 60% are still deprived of this facility. It is found in our field study discussion with the wadi holders are interested to have their residence in the near by wadi area, so that they can look after the wadi.

c.] Adequate Safe Drinking Water :-

Safe drinking water is a key to healthy life of the family and also the relief to women as one of the source of drudgery is to fetch water from long distance. We specifically attempted to look in to this question and available facts are depicted in the table- 6.22.

Table 6.22 : Availability of adequate safe drinking water

Particulars	Percentage
Safe Drinking Water	92.5
Chlorinated Water	53.3
Walking Distance - 1 to 3 Km. for Fetching Water	15.8

Source : Field Study.

It is a matter of great pleasure that 92% of the respondents have shown their satisfaction about adequate water supply. It was found that there are three major sources of water as expected; Hand Pumps (4.67%), Wells (37.3%), and spring (11.8%). Thus, 96% water supply is through these sources. Well maintained Hand Pumps are particular contribution of BAIF (DHRUVA). However, 42% respondents said about the walking distance to get water out of them 58% reported that they have to walk over 1 to 3 Km. to get the adequate water supply. This is quite undesirable phenomena. However, chlorination of water is a part of the development programme and it is better implemented due to women who have taken interest in participation. As a result, at least more than 50% households asserted positively about the chlorination. Though in terms of programme target this is less satisfactory achievement but we need to appreciate this novel feature in tribal living which will take time to get fully accepted.

d.] Health and Family Planning :-

▶ Health Status :-

A remarkable portion of budget and strategic programmes are the components of Adivasi Development Programme. We attempted to know the health related impact through the survey shown in table- 6.23.

Table 6.23 : Health Related Information

Particulars	Percentage
Vaccine to Children	94.1
Guidance to VHGs	93.1
Taking Service at Delivery in Pregnancy :	
PHC	34.4
Hospital	1.1
Illness Within Last One Year	95.7

Source : Field Study

The facts are discussed as follow:

1. First of all we tried to know the access of health guides. 93% respondents had stated to have service of health guide of DHRUVA.

2. 94% respondents reported to have "Vaccine" and largest coverage was in case of polio 69% though in case of BCG, polio and Titness etc. No where 100% coverage was mentioned.

3. Delivery at the hospital is finest measure of the best health service, however, in case of our survey 35% families have asserted about 'Health Centre' service for delivery, though 83% of delivery is being done by Village Maids (Dayan) only.

4. Though 95% of the households expressed the view that they do suffer from 'Morbidity' but the nature of sickness was not very serious in most of the cases i.e. cold, fever. However, there are few cases of skin dieses (2%); anemia (2%) and 10% cases. The study has recorded that there were very few serious illness and epidemics.

5. There are two important points about the sources of medical services as reported by respondents :

    a. 75% respondents have got some kind of medical help from their traditional medicine and 25% could have access to modern medicine.

    b. 92.3% sample households have asserted positively about the assistance of BAIF in getting Ayurvedic medicine of

improved medicine based on the traditional medicines and also guidance of Health Guide for the herbal medicine.

However, commercial health service access is quite far away from the reach of the farmers.

▶ **Family Planning :-**

An awareness and acceptance of family planning among sample households is remarkably satisfactory in the sense that 70.6% households were found following family planning as shown in table - 6.24 all households were having some kind of family planning method such as Ankadi; Nasbandhi; Oral pill and Nasbandhi, out of which 55% had reported to have operation and 1.5% have gone even for Nasbandhi; both these decisions call for progressive out look which is not easy to find in traditional tribal society. Therefore, though not 100% even 75% coverage is very appreciable.

Table 6.24 : Family Planning Related Information

Particulars	Percentage
Family planning steps taken	70.6
Ankdi	1
Nasbandhi	14.6
Operation	55.4
Pregnancy Pills	4.3
Others	3.7

Source : Field Study

6. Environmental Impact

The project preparation report of the Ministry of Finance has best explained the role of Wadi in creating positive impact on village environment under the project. This project preparation report had stated that:

"The establishment of Wadi with fruit trees and forest species will considerably increase the bio-mass and oxygen out put over several decades. The tree's root system will stabilize the soil. Combination cropping (deep and shallow rooting trees resumes adding Nitrogen to the soil) helps to maintain the level of organic

matter and improve nutrients recycling. The area treatments will effectively reduce run off rates and soil losses pressuring the soil implies the savings in fertilizer application too. This is an area which calls for more intensive study (PPR-76). Similarly, forestry species grown in the Wadi for sale of polls will also yield fodder for livestock and fire wood there by protecting the existing forest from exploitation and destruction. This is an indirect conservation benefit expected under the programme. It goes without saying that mango and cashew nut trees and forest trees in 11000 to 12000 acres of land with a large number soil and water harvesting activities as stated by us in earlier part of the study must help reduction in fallow and waste land; increase in the area under forestry and helped reducing the damage of soil erosion and helped recharging the water wells and spring due to water harvesting. Unfortunately, much detailed data could not be made available by PIA, except one interesting study (Sharad Mahajan, 1999). The study documents positive sources on "The Barometer of Sustainability" a tool developed by International Union for Conservation of Nature (IUCN) used to combine indicators related to Human Well Being together with "Eco-System Well Being". In evidence of this positive score for the Wadi project it is observed that another significant requirement of family is 'Fuel Wood'. The families were dependent on forest resources to meet the same. Various fuel wood species namely Leucaena Leucocephala, Acacid auriculiforming and Gliricia trees have been planted around the orchard. These plantations can fulfill fuel wood requirement up to 60% depending on established forestry. Since large number of families has started using improved cook stove that also would serve the actions against the forest de-plantation due to fuel wood needs of the tribals. Thus, Wadi project has obviously served a great purpose of protecting forest with positive actions and thus contributed positively in environmental protection.

Finally, the regeneration and effective utilization of available resources i.e. land and water is regarded as main dimension of ecosystem wellbeing. In order to bring about these changes settlement of tribals in their own environment by bringing changes in quality of living and building local action are crucial and these factors were crucial factors for human wellbeing. From this point the project has become very successful to create visible 'Impact' of linking the development of people and the environment and the 'synergetic effects' of these efforts leads to sustainable development.

7. Women Development with specific reference to gender issues Related Impact

The women development related impact on account of their participation in the project programme is examined in the detail with reference to specific Gender Issues. The issues related to their social importance, responsibility, roles in decision making, participation in family welfare as well as their own development of capability and economic independence are assessed.

The chief strategy of women development is through development of Self Help Groups (SHGs). Table - 6.25 shows their participation:

Table 6.25 : Women Development Through Self Help Groups

	Marginal	Small	Medium & Large	Total
Yes	126 (60.00)	181 (57.46)	49 (49.00)	356 (56.96)
No	84 (40.00)	134 (42.54)	51 (51.00)	269 (43.04)
Total	210 (100.00)	315 (100.00)	100 (100.00)	625 (100.00)

Figure in brackets shows percentage to the total.

It is quite noteble that out of 625 households (exclusively women) 56.96% women said to have become the member of SHGs. The proportion of women household members in the marginal farmers (60%) and small farmers (49%) are remarkably higher than average. Though 100% participation in SHGs will take time, it is much better than the past reported 20% participation of the respondents indicating three-fold rise in SHGs. In another question related to the benefits in joining SHGs. It is interesting that none of the member have mentioned any economic advantage except loan as shown in table - 6.26.

Table 6.26 : Benefits of Self Help Groups

	Marginal	Small	Medium & Large	Total
Lone at lower rate	102 (48.57)	159 (50.48)	45 (45.00)	306 (48.96)
Feeling of unity	30 (14.29)	40 (12.70)	8 (8.00)	78 (12.48)
Awareness about the society	4 (1.90)	11 (3.49)	4 (4.00)	19 (3.04)
Others	4 (1.90)	9 (2.86)	1 (1.00)	14 (2.24)
NA	70 (33.33)	96 (30.48)	42 (42.00)	208 (33.28)
Total	**210 (100.00)**	**315 (100.00)**	**100 (100.00)**	**625 (100.00)**

Figure in brackets shows percentage of the total.
Source: Field Study - 2004

48 of women participants expressed that they got a benefit of loan at lower rate of interest; 12.48% got the feeling of unity and 3% women stated to have awareness about the society as high as 33% did not expressed any opening at all.

It is reported that SHGs are engaged in different enterprises such as mango nursery, cashew nursery, forestry nursery, teak nursery, and wormy compost production etc. with the help of DHRUVA they get good return of their plants.

Gender issues are classified in three categories such as (i) women's participation at family level in decision making process (ii) social status of women in society (iii) family assistance to women in family work. Economic dependency of women along with low literacy lead to more severe gender discrimination in poor and tribal society; in this context, we attempted to look in these questions and available responses from our study are tabulated in the table - 6.27.

Table 6.27 : Social Status of Women

Social Status of Women	Marginal (%)	Small (%)	Medium & Large (%)	Average (%)
No Discrimination in food	98	99	100	99
No Discrimination in Boy / Girl	88	91	97	93
No Beating by husband	81	90	94	88

Source : Field Study - 2004.

The main observations based on the table are stated as follow :

1. It is quite noteble that after wadi project and the participation of women in wadi project 78.24% women expressed that they do have their voice in economic affairs of the family. This proportion is higher among marginal households 82% against middle and large house holds (67%) less than average.

2. Similarly, it was observed that in decision making in the use of their income 46% women said that they always decide themselves. Another 48% said that in case of their own income utilization some times they are consulted. At least about 5% women totally denied about their say. However, by and large 95% women had some positive assertation in their income utilization process.

3. Generally it has been gender issue of identifying the self and get scope for self development for personal growth. We explained the questioned to women development and it was found such opportunity is available to only 40% of the women with small variation. This is quite serious that almost 60%women have yet to receive support of the family for their personal growth opportunity of development with family support.

4. The women in tribal society and more extensively in families are extremely engaged in the work for 12 - 18 hours a day. We wanted to know who takes care of their children when they go for work! Almost 90% women stated that elders and In laws do take care of their children. The facility of Anganwadi is just nominal i.e. 3% to 4%.

5. One of the most interesting questions is that of value of education by illiterate women. It is expected that due to their personal care children may study and not get dropped out from the school. As much as 81% women do assist and encourage their children to study. This is quite encouraging feature towards developing capacity generation for development.

6. It is well known in the backward society gender discrimination is usual which is reflected in different ways. We attempted to examine the gender discrimination and low dignity in terms of availability of food to women; discrimination between boy and girl and even women beating by men most usual practice in tribal society! On account of the development process begun by the project. On average 90% to 98% women denied the discrimination in food all got the same food and adequate food without discrimination in favor of males.

7. Similarly, 93% to 97% women denied having discrimination between boys and girls. However, in case of marginal farmer rate of non-discrimination between boy and girl was lower than average i.e. 87%.

8. It is most gratifying perhaps due to Wadi project income generating opportunities in terms of nursery and kitchen gardens as well as wormy compost etc. which has reported that almost 88% denied the women-beating by husband. This rate is relatively lower in case of marginal producers.

Thus, we find remarkable impact on women development and gender issues in their favor which was greatly due to new opportunity created by "Wadi" based Adivasi development programme.

8. Development Environment with Development Ethos and Work Culture

The indirect impact leading to most substantial contribution in the sustainable development of tribals is the finest contribution of the present project about which there can not be debate or doubts. Tribal development literature is flooded with social, cultural and economic taboos (Dilip Shah, - 2002). The present project has successfully initiated a development process with qualitative changes leading towards positive development environment with participation of the depressed tribals. The process of the change got initiated in

the demonstration of wadi based development, which attracted the tribals to accept the condition of the project to leave alcohol which helped them to develop a "work culture" in favor of hard and assured work. The process of social mobilisation aggregated the social unity for better achieve social-economic gains. The women centered development project have helped mobilisation of women in socio-economic development change process. An evidence of emerging new tribal society with development environment and rediscovered tribals could be explained in terms of some of our observations, based on our sample survey, where we had attempted to assess the development perception of tribals and the developmental changes as endorsed by tribals.

We may document the following observations related to tribal beneficiaries and their development perception and changes in their mindset.

I) Due to the participation in the project:-

- 69% of the beneficiaries stated - to have positive sense of self confidence; self respect and self dignity.
- 45% beneficiaries have stated - feeling that development without government is possible and thus rejected "dependency syndrome".
- 93% beneficiaries have endorsed the view that village-unity and unity among ethnic groups have increased due to the wadi project.
- 70% beneficiaries have shown their willingness for taking responsibilities in village development.
- 88% tribal families endorsed the women participation in development
- 92% tribal beneficiaries endorsed the view of positive social-cultural change in their society
- 97% tribal beneficiaries accepted the positive role and help of BAIF (DHRUVA) in the development of their villages.
- 97% tribal beneficiaries accepted that the present project will help their children for better education.

After endorsing the development related changes, sample beneficiaries also provided an evidence of their development oriented attitude reflected in their active and meaningful participants through the active participation at grassroot level village Ayojana Samiti.

Some of the interesting points of expression could be summarized as follow :

a) 86% sample respondents have stated to have joined Ayojana Samiti.

b) Out of all other grassroot organisations like co-operative, panchayat, self help groups and Ayojana Samiti (planning committee). 85% respondents chosen to be interested in the Ayojana Samiti works.

c) 97% sample respondents have stated to have participated actively in the working of Ayojana Samiti itself speaks about their awareness and attitude for development.

d) 87% sample respondents have worked as only member but 11% respondents were having responsible post like executive committee membership through which they actively participated.

e) The method of participation of the respondents was exhibited by the fact that only 0.48 % have denied any kind of participation in the meeting but 56% had regularly participated in the meeting and 44% had casual participation.

f) It is interesting to note the nature of 'Intervention' of the sample respondents while 48% participated in discussion : 29% raised questions and 2.4% raised the opposition also. While 8% raised the points of information such participation is quite encouraging for very active organization.

g) Their active participation was not found futile as 92% asserted that Ayojana Samiti had taken some decisions and implemented them.

h) Obviously, the working of the Ayojana Samiti was found very useful and satisfactory as per the opinion of about 90% of the active respondents.

Thus, the above stated observations make the point clear that a silent revolution has started taking place in the tribal area.

Finally, we went to further extent to know more about the grassroot key organization i.e. Ayojana Samiti which is most popular organization among tribals as per our study. Some of the findings of our sample survey in this regard area as follow :

- ☐ We studied 22 Ayojana Samitis and found that the total members of the committees were 390

- ☐ The composition of the membership was in favor of males as female members were only 16%.

- ☐ To understand the quality of leadership, we checked the level of qualification of the office-bearers of 22 committees only 7% of the office bearers were illiterate and no one was graduate but 60% were having education up to primary school and only 8% were SSC pass.

- ☐ To understand their business operations, we asked some questions and it was made clear that these Ayojana Samitis are mainly attached to credit for livelihood. Almost 20.70 lakh was given as loan and repayment was as high as 84.43%.

- ☐ The major economic activities supported by Ayojan Samiti funded were (a) wormy compost (b) personal lending (c) development of nursery (d) forestry (e) check dam (f) drip irrigation (g) vegetable plots (h) improved agriculture tools (i) pipe lines (j) smoke less stoves etc.

Thus, these short summery of working of Ayojana Samiti do provide a hope for the active peoples' oriented development.

CHAPTER – 7

STRENGTH, WEAKNESS AND REPLICATION OF WADI AS A SUSTAINABLE DEVELOPMENT MODEL

7.1 Introduction

The present chapter an outcome of our comprehensive study of wadi based tribal development project. We have attempted to analyze the strength and weaknesses of the project and on that bases attempted to recommend some actions to promote replication process.

Our study has carefully analyzed the strength and weaknesses of the project in the light of the findings of present study as well as all other available sources. The detailed account of our major findings related to strength and weaknesses are stated as follow:

7.2 Strength of the model

Our analysis of deriving evidence of the strength of the programme is based on the different facts and findings of the programme could be best discussed in terms of the following four basic components:

1. Robust concept of sustainable development with assured livelihood.
2. Powerful Backward linkages
3. Provisions of Forward linkages
4. Positive external institutional support with special reference to NABARD
5. Development Environment

A) Robust concept of sustainable development with assured livelihood

The study reveals that project concept and design are very powerful and practiceble. The robustness of the concept design is derived from the main foundation of the acceptable programmes as

it is “People’s Need Based Project”. In built system of project design ensures to resolve any contradictions and constraints adequate enough to achieve targeted level of development with continuous process of development in the stipulated time limit period. It is perhaps one of the very rare programmes which has proved its feasibility and applicability by posting so much success that with overall cost of Rs. 20,000 worth working capital on an tiny waste land plot of 0.4 hectare an annual income of around Rs. 20000 to 25000 per household could be possible to generate adequately enough to cross the poverty line. In comparison of the targeted programme like SGSY where within three years 30% people below poverty line in a village / block was targeted have mate failure even after 5 years (Dilip Shah, 2004); this programme is far more appreciable and since tribals have realized the success. The Demonstration effect in favor of the model is so powerful that its participation needs no extra promotional efforts including subsidy as it is self promoted and that too with pleasure. This is no less significant point in favor of this project.

The second unique dimension of the project also lies in its capacity for simultaneous development of livelihood security along with environmental securing combining together constituting the “Sustainable Development” as the project has proved that simultaneous development of human progress and preservation of eco-system is possible. A detailed study of BAIF is available as an evidence (Sharad Mahajan, 2001) our earlier studies of similar project of tribal development with forestry development schemes implemented by Department of forest of Gujarat state have shown that similar projects have failed to achieve such objectives effectively and adequately (Dilip Shah, 2002).

The third important point in favor of the design concept of the project as it has focused on Gender Development. The project has gained ground because it has given adequate space and place for the gender development which has generated the multiple positive effects on the building of the successful participation strength down below at the grass roots.

B) Powerful Backward linkage support

The project has developed powerful system of proving systematic backward linkages for the successful development of the project. These linkages include systematic capacity building programme of training at the various levels for different purposes. It provided minimum technical knowledge for meaningful participation in the

project. The grass root institutional development GVM Ayojana Samiti has done a reasonably good job in the village level management of the project and providing active linkage with upper level executive body. This has led the process of development in right direction. These arrangements have also provided a platform for the transparency and collective decision making facility along with adequate ventilation for the expression and conveyance of the participants' views and constructive suggestions. The systematic training to local youth for technical function as health guide and barefoot accounts has served very wonderfully useful purpose in strengthening the villages and project itself. It has proved that self management through local youth at grassroot level is possible and external intervention in daily management could be possible to avoid, as a result, the quality of self confidence: self reliance and sense of unity among all have emerged as powerful force of positive development. Judicious mixture of tribal wisdom and modern knowledge has developed a new strength among participants.

C) Provision of Forward linkages

This is a robust part of the project. It has been experienced that even a best NGOs have also failed to promote rural enterprises and industries. A recent example of "SEWA RURAL" (sewa rural, 2000), where Gramodyog Kendra miserably failed due to absence of adequate forward linkages. On the contrary to this failure: the Wadi project remained quite successful despite of challenges of new and perishable products having no nearby assured market. This was due to strong forward linkages planned right in time with appropriate institutional arrangements and planning. Establishment of processing unit at central level (Vansada) immediately as soon as mango production started, timely establishment of decentralized tiny units of processing on co-operative basis right at the doors of the producer's households; the establishment of Vasundhara co-operative looked after the task of the processing and manufacturing products; identification of markets of the products and selling arrangements including advertisement and development of brand name i.e. Vasundhara etc.; But for these post harvest forward linkages; the Wadi project could have perhaps not become so successful.

D) Positive external institutional support with special reference to NABARD

Apart from powerful, prestigious, and prominent V.O. like BAIF, the model has a great source of strength from external institutions

which include state government and its rural development related lined departments as well as financial institutions including NABARD.

Government has appreciated and adopted the model and infact extended financial support to DHRUVA in development of Wadi in Vansada area along with CAPART. However, beyond that there is no active relation of DHRUVA with district level rural development organization so far as 'Wadi' development in Tribal area has concerned in the context of relatively weak relationship, it is a great pleasure to note that recently Dangs' DRDA has chosen DHRUVA – BAIF to implement 1500 wadi development in most interior villages of Dangs under Rashtriya Samta Yojana of the Planning Commission of India.

Financial organization like public sector Banks or Regional Rural Banks are found least interested and there is no active relation between V.O. and these organization in case of the 'wadi' project.

However, these inactive relations may be due to very active participation of NABARD in acceleration of the wadi project in tribal areas.

Infact right from the inception of KfW intervention through the liberal aids to implement wadi based Comprehensive Tribal Development Project in Dharampur – Vansada area, NABARD is associated with project as Nodal Agency on behalf of Ministry of Finance, Government of India (1989).

NABARD has played very major role as friend, philosopher and guide. It has contributed its major input in the project in the following manner.

1. NABARD has developed friendly approach and relationship for purely business like regular monitoring of the project i.e. quarterly and annually.
2. NABARD has become active link between KfW and project executive agency and provides all technical assistance to both and arrange its regular review session.
3. Financial grants are regulated by NABARD.
4. NABARD oversees the implementation of the recommendations done during monitoring of the project.

5. It also arranges frequently for independent evaluation of the project to get the feedback for all funding agency as well as project executive agency.

6. NABARD encourages and guides effectively in the area of development of self-help groups and micro finance NABARD guidelines and norms are followed in financing to SHG including Revolving Fund; the grading methodology is also based on NABARD norms.

7. The credit based wadi development is initiated through NABARD. It has provided very useful guidance in the development to grant supported scheme to click tribal development through the wadi based development project: it provides adequate funds for refinance under credit schemes designed by Ayojana Samiti.

8. Finally, whenever, financial support is required for the acceleration of specific programme, NABARD comes forward with liberal funds. For example, it was realized by NABARD that without water harvesting works done right in the time, wadi project will be less likely to get the optimum success hence, it generally provided a fund of about Rs. 4.0 crores to enable the project executive agency to accelerate water harvesting activities.

Thus, external agency like NABARD has played a very vital role in the development of the project of replication of wadi as sustainable development which has provided strength to the model and project executive agency.

E) Development Environment: Development attitude and work culture for sustainable development in tribal society and among tribals

The Wadi based comprehensive tribal development project has made very basic 'Qualitative Change' in process of the development. This has become one of the greatest strength of the project to ensure sustainable tribal development.

The strength of the project has got generated through successful experience of tribals for the first time at two levels of tribals as individuals: The tribal society has undergone a great social, cultural and economic transformation. The positive changes in all the three areas have helped creating a Development Environment.

Major change contributing to develop an environment for development rooted through strategic social capital development along with successful demonstration effort of “Wadi holding Tribals”. A powerful reversal process from self- defeatism, alcoholism and dependency syndrome to the emergence of courage; confidence; conviction, character building, motivation for development, ability to take initiative for collective community action have created a vivid evidences and stories of the cultural transformation and social transformation. This has generated an inbuilt process of the project implementation, monitoring and evaluation at the grassroot level by participants: it must be recorded that during the project visit we have come across the excellent stories of community initiative and actions to meet the community need based facilities such as construction of schools even oil crushing units village market (HAT) and Agro-Service Centers, etc.

A new social process of social mobilization has started positively; on the one side “A new class of Wadi wala” development conscious class emerged along with successful development experience. The non-wadi tribals could “Perceived direct gain of wadi” acquired by wadi holders. It is this which provided a unique identity to wadi holding tribals. This new identity of the successful class has played a positive role in building a new kind of social mobilization towards the ‘Social-Integration’ of all tribals who want to follow the success of Wadi holding tribals. The development of grassroot social institutions as social capital provided a push to promote the process. For example GVM and Ayojana Samiti become vibrant vehicles of people’s managed development. Thus, a systematic exposition of the tribals in development with gradual success has taken the shape of a Mass Movement with mass village participation assuring sustainable tribal development with people’s participatory development.

Finally, these new changes of social transformation in favor of development has further gained its strength on account of the “Gender development” in Wadi project which has provided a new base of socio-economic development for women through their direct participation.

This new partnership of women in the process of development has helped the tribal society to become more open: flexible to adjust with development needs and realities.

The 'Social Capital' developed out of the grassroot institutions along with better participation of tribals in traditional rural institutions like Panchayati Raj Institutions and co-operatives etc. have provided a powerful foundation as well as strong mechanism for the constructive transformation of peoples' aspirations; ideas and need based demand in the Action.

The tribals in the post project period have been totally rediscovered. There are at least five strong points of appreciable 'Changes' among tribals, which have now become strength of the project ensuring sustainable development through this model.

1. Alcoholic and as a result, it was extremely difficult for them to work hard. However, BAIF condition of no entry with alcohol played a strong role in developing work culture and essentially become responsible to break the 'Backward bending supply curve' of tribal labour and wage relations. This has helped to break the vicious circle of poverty successfully through the big push of the Wadi project.

2. A vivid initial experience of success touched at the root of the generation of self-confidence and strong motivation which tremendously helped transformation of pessimist mind set in to optimist and positive outlook which has helped development of new environment of growth without government.

3. An art of scientific plantation and orchard (Wadi) management with blending of tribal wisdom and knowledge has built up new scientific temper and attitude which will be helpful in transforming traditional agriculture subsistence and developing micro-enterprises in non-farm sector.

4. A successful story of the selected self-employed ones, for example a case of Rajesh Gavit (BAIF-Annual Report, 2002) who proved that even with simple mango grafting i.e. 10000 mango grafts with Rs. 20 per graft provide Rs. 2,00,000 income annually adequate enough to cross poverty line. Similar stories we find in the cases of other enterprises including wormy compost production etc. have helped developing entrepreneurial capacity and readiness to take limited and calculated risk with modest credit support of his village Ayojana Samiti. This building of motivation for self-employment will not only help much faster development but will also ensure sustainable development with least dependency. It is this change which has shown optimism of credit based Wadi project.

Thus, Tribals in post project period has substantially changed in favor development.

Finally, Tribal's habits and health related behavior changes are much faster now reducing the 'morbidity' and with constant efforts of health guides "Tribals have become much more health conscious and started following family planning which will promote efficiency and regulate fertility in long run.

Thus, 'process of development' during project implementation has led positive development environment along with total transformation of tribal society and tribal themselves which will provide real source of strengthening sustainable tribal development.

7.3 Weaknesses of the Programme

The weaknesses of the programme at this juncture have to be appreciated in the right context and right spirit. Most of the weaknesses identified are generally related to inadequacies in implementation of the programme. These weaknesses are reported and indicated and observed in our study as well as in our discussions with relevant officials working at different organizations. These deficiencies and inadequacies are all possible to correct to strengthen the programme. Some of the major weaknesses are discussed below:

1. 'Wadi' based development has every potential of income generation. However, all Wadi certainly could not become successful. Thanks to recent grading system, it has become very obvious that the development of Wadi is not satisfactory in all cases. It is reported that 43% Wadi are A grade: 57% Wadi are falling in C and D grade. As a result, there is a considerable yield variation in the range of 15 Kg. to 235 Kg. (Kaju) per Wadi.

2. The major determinant of the quality of Wadi development is soil and water conservation actions which are essential for survival rate preservation and full scale development of Wadi. This could be possible to judge from the physical and financial performance records which including the poor utilization of special grant of NABARD to provide water with Rs. 4.5 Crore. In fact the single most factor of grading is the soil conservation work where 66% and 67% fund utilization shows great scope of substantial improvement.

3. Wadi based development project itself can not give adequate income and employment during the gestation period of at least 4 - 5 years. Hence, adequate planning for employment and income generation through allied agricultural activities; as well as inter - cropping and fruits and flower farming (horticulture) are essential to eliminate migration so that tribals could spare time for their Wadi development which seemed to be less than satisfactory.

4. One of the observations on the field is regarding the trade off arisen due to wage differentials where wages are higher in non-Wadi labour opportunity then S/W conservation in Wadi. Hence, some times Wadi holding family prefers to work to earn wage outside the field to meet their immediate requirements. Therefore, a question is to review the wage gaps and actions to narrow it so that soil / Water conservation Works also can get momentum.

5. It is essential to note about the increasing proportion of 'drop out'. It may be stated that 'drop out' in Wadi are defined in terms of survived plants if out of 60 plants less than 15 plants are survived than with 25% these Wadi holders and Wadi may be treated as "Drop Out". It is reported that such drop out rate was 12% in 2002 against 9% in the year of 2000. This has to be reduced to optimize the resource utilization.

6. Recent documented study of rehabilitation of dropped out 122 Wadi farmers of the village of Mandava have shown clearly the role of continuous contact and free flow of information between executive agency and participants. Administrative delays and an absence of open dialogue and imposition of issues from above play adverse role in the progress of Wadi project. These road blocking factors need to be corrected.

7. The specific programme for landless tribals are not adequately followed even in terms of targets for example: against the target of 2000 landless families only 180 landless households 9% are covered for employment. Similarly, against 250 families to be developed through 'Micro Enterprises' not a single family is covered and as a result high level of poverty induced migration of landless labour could not be plugged effectively.

8. Dairying could be viewed as good source of supplementary income for Wadi producers and landless and BAIF has acquired

all India name and credit in development cross-bred animals. However, it is not given adequate important in the present programme. Hence, an appropriate strategy and action plan to develop dairying on the hill sides and top steps could make viable. However, in this direction project implementation is very unsatisfactorily. As there are neither any programme nor scheme to develop dairying in this area with improved source of water on account of the watershed projects and available net working with milk producer's co-operative at least in some villages such dairy development is not impossible activity.

9. Women development programmes are related to development of Self Help Groups only. However, even simple Self Help Groups are organized only in 55 villages out of 202 villages. Under the project 65.62 % are yet to be covered. Out of those SHGs how many of them have adopted micro enterprise and how many of them could become successful to get adequate income and employment is yet to be recorded. In any case, in this area of women development there is a need to make faster headway in remarkable manner.

10. Finally, on account of the slower progress in developing 'A' grade Wadi; inadequate women development through SHGs and micro enterprises, the special fund for credit for livelihood provided by NABARD for refinancing is obviously less utilized i.e. 22% to ensure the sustainable tribal development with credit based development. It is essential to promote this programme more effectively and rapidly.

7.4 REPLICATION OF WADI MODEL

Replication of Wadi project has great potential so far tribal rehabilitation has been concerned as there are no alternative development models directly applicable to the tribal development one of the most successful alternative development model emerged in Gujarat as "Anand pattern Co-operative Dairy Development" is not very suitable at least in the present situation for several reasons (Dilip Shah, 2000).

The process of replication has already begun right from 1982 when it was originated in Vansada area where 8 villages and 42 families participated and initiated the project. Today 25,000 families of 300 villages of Gujarat, Maharashtra and Rajasthan have adopted the programme. Recently, 2000 families of Rajasthan have also

adopted the programmes. According to latest Annual Report of BAIF-2000-03 while initial support came from the Ministry of Environment and Forest and CAPART; KFW helped BAIF to expand the programme initially in Gujarat and later on in Maharastra. At present, "Wadi programme is spreaded over 32 districts in 5 states covering 50000 families" (BAIF Annual Report, 2003).

Thus, the programme is on the verge of becoming "National Model of Tribal development". In the meanwhile, the model has received worldwide recognition. The project was presented as a successful replicable model for poverty alleviation at the UNDP forum of Ministry for Poverty and Environment in New York, USA in 1999 and at the GLOBAL Dialogue in Hanover, Germany in 2000.

At the state level, new initiatives have been taken-up for rapid replication of the model as a recognized project in tribal development pattern such as "Maharashtra pattern as well as Gujarat pattern".

Apart from replication assistance to BAIF in Gujarat by KFW; based on the mid-term preview KFW has decided to support replication of the project in Maharashtra; A new programme to develop for 1000 families in Nasik and Thana district was approved in the year 2000 (BAIF, Journal-2000).

According to reports from BAIF, the programme in Maharashtra has attracted the attention of local leaders and the government officials. Indeed the programme in Maharashtra was initiated in 1992 with the support of Government of Maharashtra in JAWAHAR and MOKHADA were large number of infant deaths were reported from starvation. Over the next 10 years, the state not only appreciated the role of BAIF in tribal development by conferring 'ADIVASI SEVA SANSTHAN AWARD' in 1997 but also encouraged BAIF to develop new project proposal to cover tribals in other districts of Maharashtra.

Recently, during the budget speech in the State Assembly in March, 2003, the Finance Minister of Maharashtra stated that in order to promote integrated welfare of tribal population in the districts of Nagpur, Nandurbar, Bhuly, Thane, Amravati, Nasik, Gadenirali, Gondi; Chandrapur, Raigad, Pune and Ahmednagar etc. It is proposed to target 1000 families in each district i.e. 12,000 families in the state to be developed through 'Wadi' Model on the lines of Wadi programme implemented by BAIF through holistic approach will be implemented by reputed NGOs in the state (Jayant Patil, Finance Minister, Budget spread 20th March, 2003).

In Gujarat, KfW have now approved the Phase-II of the tribal development programme to cover 4,000 families from 90 villages in Dharampur and Dangs Block of Gujarat. The project has commenced from 2003-2004 for period of 10 years (2013) (Editorial BAIF Journal, 2003).

At state level state Government has recognized 'Wadi' model of BAIF for tribal development and has included in 'Gujarat Pattern'. A programme of 'Wadi' based development has been introduced in 2003-04 the district horticultural development board is assigned to work as Nodal agency, NGOs are encouraged to adopt Wadi programmes for tribal development and even individual families can directly take advantage of the scheme. The scheme of Wadi development has a provision of its implementation in 10 districts with tribal areas in Gujarat. For 0.20 'GUNTHA' Wadi estimated cost Rs. 6668 is recognized for which Rs. 2334 i.e. 50% grant is made available, other 50% is suppose to borne by beneficiary. Under the scheme, arrangements are being made to provide 20 Kaju plants, 10 Mango plants and 25 Forest plant trees for Boarder Plantation. Expected benefits of the scheme shows the reasonable cost-benefit ratio of 10 years which shows an estimated investment of Rs. 7,000 will fetch in 10th Year a return of Rs. 90,000 to 1,00,000 to tribal family according to initial reports. Dangs have received a special project grant under 'Rastriya Samata Yojana' of planning commission meant for backward area development. It has been decided that under this project number of NGOs including BAIF has been assigned the task of developing 1500 wadi. By each of the NGO in most interior part of the Dangs (Press note). Wadi project has started gaining popularity among NGOs and tribals' BAIF is helping all those NGOs in case of difficulty in implementation. BAIF is seriously engaged in extending techno-managerial support to development organizations. For which it has received the support from Government agencies such as National Wasteland Development Board; National Rural Employment Programme; Tribal development Department, District Rural development Agencies, NABARD and other International agencies.

7.5 Recommendations for the Rapid Replication

As we have seen the replication process at various levels has already started in Western India however, the model developed by BAIF could be replicable with best possible advantages in other tribal area of similar nature provided the following points are considered in replication of the programme:

1) 'Wadi as an anchor of tribal development could only be possible in the similar climatic and ecological conditions for horticulture production could take place. The detail inventory of infrastructural status; Agro-climatic characteristics and socio-economic profile of the villages and people are very essential to modify the project to adjust with reality.

2) It has better chance of the success where adequate irrigation facility is available. However, the advanced Action Plan and its Implementation of water resources management could help Wadi development on wasteland also.

3) The composition of the plants needs to be decided depending on the nature and characteristics of the soil. 'Mango' dominated Wadi may not work even in other tribal areas. There could be another anchor product like that of 'Milk' or 'Millet' based products.

4) Present State Government schemes are required to be reviewed in the context of the under estimated cost and element of subsidy. The best model of Wadi is unlikely to be successful if the Government approach and designs are fitted in their application. Government approach generally suffers from targetization and unrealistic estimates and absence of adequate perforation. NGOs are required to be invited to participate and more specifically present scheme of Wadi under TSP is totally needs to be reviewed as the provision for financial supports is very inadequate and provision of supplementary inputs is totally absent. As a result, there is a great destruction of plants. After, payment of 50% grants, there is no follow up actions and hence, Government Wadi programme may lead to failure if due actions are not taken.

5) Those NGO which want to participate in 'Wadi' promotion programmes in tribal area, they are required to be adequately and appropriately trained to undertake such project and training also should be more intensive and not like that of watershed project training in Gujarat (Dilip Shah – 2004).

6) The 'Wadi' alone could not work without appropriate 'Backward Linkages' including the institutional arrangements like that of Ayojana Samiti and Gram Vikas Kendra at village level. NGOs have to develop such linkages first.

7) Similarly, appropriate advanced planning is also required for forward linkages to be developed for the ultimate success of the Wadi Project in post harvest period. These forward linkages related items include:

- Working capital support
- Processing arrangements
- Produce manufacturing and packaging
- Marketing arrangements
- Identification of markets
- Information System (Market Intelligence)
- Institutional arrangements to undertake all these function (Cooperatives).

8) The lessons learnt from the BAIF project must be followed seriously and sincerely. Some of the points indicate lessons we could underline as follow:

a) Schemes for 'Women's development and landless should be conceived right from the first year of the project.

b) Skill development related training technology and credit support to develop non-farm income generating activities and micro-enterprises.

c) The modernization process should not be confined to 'Wadi' alone; the traditional agriculture of tribals also should transform in a manner so that productivity and production may be increased to convert subsistence agriculture into commercial modern agriculture.

d) The Wadi based development should include quick income generating projects including dairying and capability building instrument for education and literacy for tribals must be considered as the part of the project.

e) The mutually benefiting co-ordination and cooperation with Government and other development funding agencies should be cultivated and converge the programme in such a manner that optimum benefits of funds could be drawn without divergence or duplication.

9) In view of BAIF success, we may state that the agencies involved in the 'Wadi' project could not afford to dilute the significance of the participatory development strategies; emphasis on capacity building of beneficiaries and focus on gender development of sustainable development.

10) Finally, all those Government and Non-government agencies intending to realize the replication with clear benefits to tribal will have to note that this model was evolved and implemented and ultimately made successful by BAIF which has taken a long time for developing such a successful model of development and that too with very dynamic, committed Gandhian Foundation; powerful professional management experts with equal sense of commitment and team work of multidisciplinary staff, which is large and versatile. DHRUVA itself has a staff of 124 Post-graduates, graduates and Diploma in the area of Agriculture, Engineering, Health, Food technology, Finance, Social work and Rural Studies etc.!

7.6 CONCLUDING NOTE

Thus, 'Wadi' as sustainable development model has proved its basic worth by achieving the objectives of sustainable livelihood along with environmental development leading to sustainable development. The 'Wadi' model has proved that a committed professional management oriented NGO could become successful to idealize the poor, depressed, oppressed and dependent tribals through mutual co-operation, collective efforts and confidence building by experiencing the success. However, the replication of the Wadi is more an opportunity than challenge due to the path already carved by BAIF after long experience of experiments and failures in last three decades in developing 'Wadi' model.

CHAPTER – 8

SUGGESTED POLICY ACTIONS

8.1 Introduction

Wadi based Adivasi Development Project has been doing well. Our impression based on our study is that there is a scope for better performance and quick achievement as well as shaping better model for the tribal development. On the premises of such a positive outlook; we would like to broadly list out the major policy actions to promote the comprehensive tribal development through 'Wadi' with the set of the suggestions are stated below :-

(A) Policy actions to eliminate areas of concern
(B) Policy actions to promote excellence
(C) Policy actions in the areas of new initiatives

8.2 Policy Actions to eliminate areas of concern

1. 'Wadi' based project needs to be reviewed in terms of the 'grading'. If certain wadi is found non-viable steps should be taken either to withdraw or find out alternatives to make them viable and productive.

2. The credit based project of wadi could be possible but the present lending interest rate policy of 'SAHABHAGI YOJANA' seemed to be high and need to be reviewed with measures of reducing transactions cost.

3. It is now very clear through our analysis that a lot of 'market research' is needed to get remunerative prices of the wadi produce. The present pricing policy of the Dhruva to provide market price to producer is not enough as expected from strong co-operative producers must get greater and guaranteed price and assured market for their products. Project authority needs to look in to this question seriously.

4. The project is required to be accelerated in the favor of landless households. The employment on the processing alone could not be sufficient. The only course open is that of non-farm micro enterprises at large scale. Project authority needs to identify the remunerative micro-enterprises, relevant training inputs, market support and credit technology support. This is most challenging

job but not impossible due to very powerful team of experts and consultation available to PIA.

5. The self help groups of women are not adequately developed. Those developed SHGs also confined to traditional agro-economic activities mostly mango grafting and wormy compost over a period as happened in the other area. It may happen that such activity based enterprise also may not find adequate market for all the producers, hence, large scale micro enterprises with diversification in non farm sector including new opening in the service sector is also required.

6. Increasing proportion of 'drop out' of wadi holders is a matter of great concern. The drop out rate should preferable zero but in any case should not be more than 2% to ensure the optimization of resource utilization every step prior to wadi sanction and after that should be taken to minimize these rates.

7. There are new potential of development dairying for marginal producers and even landless (who may be given common land plots) and on account of improved water supply situation due to water resources development programmes of V.O. and NGOs. In our recent visit to Karjun village we found that this village Gram Vikas Mandal has already started dairying with just 300 liters per day with tie-up arrangement with Vasundhara dairy of Valsad. This example has demonstrated that issue of transport etc. could be tackled if one wants to start such activity.

8. Present relationship of Project Implementation Agency Dhruva is relatively much weaker even with those departments of the government where under tribal sub plan 'wadi' project is being replicated. Even the data related to Sutharpada TSP wadi where BAIF was responsible to undertake 'wadi' project was not available to us. A large scale replication of wadi project needs the powerful coordination and cooperation between Dhruva (BAIF) and government tribal project departments of the area such as TSP and DRDA.

9. Similarly, the replication efforts of NGOs are never taken seriously by BAIF. Should we not have 'workshop' to review the experience of NGOs in wadi development under TSP and to provide them the necessary lead and assistance by BAIF? Role

of BAIF in development of wadi based Adivasi development is like the role played by 'AMUL' in developing nationally accepted "Anand pattern" by even providing brand name to small dairy cooperatives to adopt the Anand pattern model successfully (Dilip Shah). Project authorities should work out Comprehensive Action Plan to promote NGOs to replicate the model.

10. An environment for agricultural development is already evident from their increased percentage of marketed inputs. However, an intensive effort is needed to make the tribal participants of the second revoluation based on extension of Bio-Technology. In fact this is a major missing aspect of tribal development project. The "Double "Green" revolution" could be possible by application of Bio-Technology only.

11. Finally, Forestry Plantation seemed to have received low priority in plantation. Survival and production of forest produce as a result substantial contribution in the project is missing. Efforts and incentives are required to accelerate the process of development in this grow area of concern.

8.3 Policy Action to promote excellence

1]. BAIF needs to arrange for the continuous On-line monitoring of the project with participation of beneficiaries. They may be trained to do it through the channels of their Ayojana Samiti. Their views and perception should be given due place in the implementation.

2]. Though present management data system is quite satisfactory. There is need to develop a statistical data-cell with statistical officer who also could work as public relation officer. This will help a lot in systematic data generation and its utilization without disturbing the present project officers in execution of their project.

3]. There is need for continuous research and process documentation also. BAIF may design a policy of entering a kind of Memorandum of Understanding (MoU) with the Department Of Rural Studies - A Post Graduate Department of South Gujarat University. Such arrangement will help development of research based feedback At present the areas like (a) training (b) environment protection (c) health related practices (d) economic programmes about which much less is

documented and invented in the form of impact related research. Solid data based findings are not available in such cases.

4]. Though Ayojana Samiti at grassroot level is working well there is a need to strengthen the working of Gram Vikas Mandals at village level numerically as well as qualitatively. This grassroot organization needs to be strengthen by special action plan.

5]. Adivasi development project has achieved a lot also due to grassroot cluster incharge officials and health guides and barefoot accounts etc. They need to be appreciated in terms of specific package of incentives to retain their motivation and even to retain their services as such an experienced staff at grassroot level is not easy to be sustained.

8.4 Policy Actions in the areas of new initiatives in the project

There are couple of areas where fresh initiative may be taken up for the promotion of this project.

1. A vast experience and acceptability of wormy compost and NADEP compost production and utilization may be a good point of initiative to develop organic farming, which may fetch better price and market and open the new line of tribal development through agricultural production.

2. An initiative may be taken up to take the advantage of state policy of water resource development for example, BAIF may do MoU with state to develop exclusively watershed projects and farm pond (Khet Talavadi) to push its Jalkund scheme. This will click the project with least funds.

3. There is a great potential for contract farming to promote wadi production. We may try to develop herbal production and medicinal plants also under 'contract farming'. There is need to develop agro-based activities including inter crop etc., which may be possible through contract farming and BAIF being internationally known organization will certainly be successful to search out the partners for the contract farming. NABARD also should support such ventures as it is in their purview and priority area of Rural Development related activities.

4. Mango grafting has now become household activity and perhaps tribals earn more in mango grafting than mango production. We may find out such an activity which is traditionally known but could be improved through upgraded technology.

5. Finally, there is a great opportunity of developing business for tribals through production of 'RATAN JYOT' oil as "Bio-mass fuel" which could be possible developed as fancy around wadi and as farm fancy plant of the farmers.

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