EXECUTIVE SUMMARY

Prepared for:

IRRIGATION AND COMMAND AREA DEVELOPMENT
GOVERNMENT OF ANDHRA PRADESH
HYDERABAD

AGRICULTURAL FINANCE CORPORATION LIMITED
(Wholly Owned by the Commercial Banks)
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I. INTRODUCTION

01. Irrigation development has been given high priority by the State in tune with the national priorities and about 51 per cent of the ultimate irrigation potential of 12.6 million ha was created till 1991. With a view to improve the utilisation of created potential, the State has initiated several steps such as launching of Command Area Development Authority (CADA) for major irrigation commands under Nagarjuna Sagar Project (NSP), Sri Rama Sagar Project (SRSP) and Tunga-bhadra Project.

02. The Kakatiya Main Canal, the major canal under SRSP taking off from Sri Rama Sagar Dam, after traversing about 146 km out falls into the Lower Manair Dam (LMD) a balancing reservoir built across river Manair. For construction of the Kakatiya Main Canal of SRSP and also for construction of Sri Sailam Right Branch Canal (SRBC) and development of their commands, Andhra Pradesh Irrigation Project -II (APIP-II) was implemented since June 1986 till 1993 with World Bank assistance. The Andhra Pradesh Irrigation Project-III (APIP-III) is proposed to complete the spillover works of SRSP and SRBC at the earliest so that the works left incomplete and in an inoperable state be completed through additional investments and the contemplated irrigation potential created in full and utilised through better water management practices for augmentation of agricultural production and the project is being posed for World Bank financial support.
03. APIP-III: SRSP Coverage: While the SRSP Kakatiya Main Canal has a command area of 1,65,000 ha above LMD in the districts of Nizamabad and Karimnagar, the command below LMD is 1,63,000 ha most of which falls in Karimnagar and Warangal Districts. The works proposed under APIP-III are: (a) completing balance works of upgrading and conveyance works of Kakatiya Main Canal and its distributaries above LMD from km 0 - km 146; (b) completing the balance works in conveyance system below LMD from km 146-km 284 including the distributory network; and (c) provision of feeder roads network in the irrigation command in Karimnagar and Warangal districts.

04. Resettlement and Rehabilitation: Similar to the R & R Action programme already under implementation for the oustees of Lower Manair Dam (LMD) in Karimnagar District under APIP-II, the GOAP is determined to provide all required support and assistance to the affected households who lost their assets like land, house etc under acquisition for SRSP APIP-III project irrigation infrastructure which aims at carrying the benefits of SRSP to a large population in a wide area spread over Warangal district.

05. Socio-economic Study: For enabling the GOAP to draw a comprehensive and viable resettlement and rehabilitation plan, a detailed socio-economic survey of the affected households has been conducted in Warangal district in the areas coming under APIP-II and APIP-III.

II. DESIGN OF THE STUDY

06. The economic rehabilitation of the affected households with suitable assistance enabling them to attain the pre-project levels has been an integral part of any irrigation development project. A detailed understanding of the socio-economic conditions and impact of land acquisition on these affected households is a pre-requisite while formulating such economic rehabilitation plan in respect of SRSP under APIP-III.

Definitions

a. **Minimum economic Holding:** 5.0 acres (2.0 ha) of dry land or 2.5 acres (1.0 ha) of wet land is treated as minimum economic holding;

b. **Project Affected Person (PAP):** is the person or household who lost 25% or more of his/her land either under main canal or its off take distributaries or network of ayacut roads and left with less than minimum economic holding. A person or household who lost more than 25% of land but left with marginally above minimum economic holding but falling Below Poverty Line (BPL) is also covered under this category. Landless/Tenant/Share croppers attached to the households affected by the project fulfilling
the above criteria do also come under PAP category and are also eligible for economic rehabilitation assistance.

c. Other Affected Persons (OAPs) are those who lost less than 25 per cent of land holding and are not eligible for any economic rehabilitation assistance.

d. Total Affected Persons (TAP) are those households under the above two categories (b & c).

08. Study Area: The study area comprises (i) Project Affected Villages (PAVs) under SRSP Kakatiya Main Canal from km 234 to km 267 due to construction of structures; (ii) km 267 to km 284 due to excavation of main canal and construction of structures and (iii) off take distributaries of the main canal between km 234 to km 284 namely DBM-31, DBM-37, DBM-38, DBM-40 and DBM-48 apart from ayacut roads in the commands to a limited extent in the first instance. The study area is spread over 174 villages (PAVs) in 22 mandals of Warangal district in Andhra Pradesh.

09. Methodology: A comprehensive socio-economic study has been carried out on census basis covering 8208 (PAPs and OAPs) out of 10216 awardees list under canal infrastructure provided by the Special Deputy Collector (SDC) Land Acquisition (LA) Warangal. SDC (LA) Karimnagar provided awardees list of 598 persons in 16 villages affected under ayacut roads under packages 24, 25, 28, 30, 33, 35 and 36. The household survey in respect of ayacut roads was limited to only PAP households after conducting short enumeration of these households since the availability of these lists was delayed. The data were collected both from primary and secondary sources and necessary schedules and formats were designed for collection of the required data. According to the criteria that emerged during the discussions held with pre-appraisal Mission (April 17-May 3, 1995) by the State level Officers of GOAP there is need for conducting survey of land less households in a village, wherever the total loss of land is more than 50 per cent of the net cultivated area of the village. As the total land loss did not exceed 10 per cent of the total net sown area in any village in the study area, the household survey for the land less labour was not done.

10. Pure-tenant/share cultivators wholly dependent on PAP holdings and who are deprived of their livelihood consequent to the PAP losing his land due to acquisition do not exist in the study area. However such of those cultivators who do tenancy/share cropping consequent to their losing land either in part or full under acquisition have only figured in the study.

III. PROJECT AFFECTED VILLAGES

11. The Project Affected Villages (PAVs) with a total geographical area of 17284 sq km comprising 174 settlements spread over 22 mandals in Warangal district form the study area. The study area of these PAVs has a population of 49083 as per 1991 census, of which 254756 are males and 244327 females. The sex ratio is 944 females per 1000 males. The scheduled castes (SCs) constitute 17.75 per cent and Scheduled Tribes (STs) 15.57 per cent of the total population. The literacy rate is 26.77 per cent with a literacy of 37.66 per cent among males and 15.41 per cent among females.
12. The workforce constitutes 49.01 per cent of the total population. The workforce among males is 55.67 per cent while among females it is 42.06 per cent. The marginal workers having less than 180 days of employment in a year constitute 3.23 per cent of total population of the PAVs/Study Area. Out of the total workforce, 36.82 per cent are cultivators, 45.99 per cent agricultural labour and persons depending on forestry, fishing and livestock are 1.14 per cent which together constitute 83.95 per cent of the workforce who are depending on primary sector namely agriculture alone. The workers in secondary and tertiary sectors are 16.05 per cent.

13. The study area has an average annual rainfall of 1028 mm and the rainfall ranges between 950-1100 mm in different parts of the area and 84 per cent of the rainfall is from south west monsoon alone. The mean maximum temperature varies between 30.3° C in August to 40.4° C in May and the mean minimum temperature fluctuates between 16.7° C in December to 26.8° C in May. In extreme hot summer, temperature soars to 45.0° C and in cold conditions the temperature dips to 14° C. The soils in the area are predominantly black soils (48%), red soils (40%) and other mixed soils (12%).

14. The landuse pattern shows 222928 acres (61 per cent) of net sown area out of the total geographical area of 364900 acres. Forest area constitutes 1.13 per cent, and current and permanent falls 21.65 per cent. The percentage of net sown area is higher than the state average of 37 per cent.

15. Land acquired as per the SDC (LA) Warangal was 4689.43 acres with an average compensation of Rs. 31817 per acre. The average compensation per acre paid in DBM-40, 48 and the main canal is higher than the compensation per acre paid in DBM-31, DBM-37 and DBM-38. According to the SRSP irrigation records an area of 297 acres in DBM-40 and DBM-48 has already been taken possession which is under process of acquisition. The household survey of the affected households covered 4213.81 acres which constitutes 90 per cent of the area reported by SDC (LA).

16. An area of 92000 acres is under irrigation which is 41.2 per cent of the net sown area. Wells are the major source of irrigation for 72 per cent of the irrigated area and tanks rank second with 25 per cent and the balance under other sources like surface streams/canals, etc. Paddy (17.27%) among cereals, groundnut (20.59%) among oilseeds are the major crops. Commercial crops like chilies, cotton and turmeric constitute 31 per cent of the total cropped area. The area produces 95786 tonnes of cereals, 45713 tonnes of oilseeds and 66518 tonnes of commercial crops which include cotton (38681 tonnes) and turmeric (12411 tonnes) and chilies (15426 tonnes). The estimated total production loss due to land acquisition is 4125 tonnes. The area is having adequate infrastructure related to education, health, communication, transport, electricity, credit and banking, agricultural support services, etc.
IV. PROJECT AFFECTED COMMUNITY
A DEMOGRAPHIC PROFILE

17. The Socio Economic survey of 8208 canal affected households and 29 affected households under ayacut roads reveals that Hindus constitute over 98 percent of the households and Muslim and other religions about 2 percent. In case of households affected under canal infrastructure about 41 percent of the households are from DBM-48, 15-16 percent each from DBM-38 and DBM-40, 22 percent from DBM-31 and rest are from DBM-37 and Main canal. Scheduled Tribe households are 25.10 percent, and Scheduled Castes 7.42 percent, Backward Castes who are in predominant number form 51.43 percent and Other Castes are 16.06 percent in case of canal infrastructure and more or less similar pattern of caste wise households exists under ayacut roads. Among the surveyed households total female headed households are 285 comprising 61 PAPs and 224 OAPs. Sizeable number of (44.4 percent) ST households are in DBM-48 followed by DBM-40.

18. Nuclear families are numerically more with 80.52 percent and the traditional Joint family system is seen only among 17.3 percent of households. Single headed households are only 2.2 percent. Joint family system is more among Backward castes and other castes while in SCs and STs nuclear families are predominant. The land acquisition has caused shifting of some house hold into land less category. In case of PAPs out of 209 households which drifted to landless category 57 households have become landless due to land acquisition and 152 turned to landless after disposing off their balance land due to economic compulsions. The total population of the households is 40240 with a sex ratio of 976 females per 1000 males in overall households. Interestingly the female population among PAP households has outnumbered the male population with a sex ratio of 1002 females per 1000 males. BCs and OCs have more female sex ratio.

19. The average size of the family among the households is 4.9 members in case of canal infrastructure affected households and 5.0 members in case of PAPs under ayacut roads. The overall literacy rate is 37.0 percent which is higher than the average literacy rate of 32.6 percent in Warangal District. 48.1 percent among males and 25.5 percent among females are literates among the affected households under canals, while 34.42 percent are literates in overall households. The total work force is 65.7 percent of the total population. The dependency on other members of household is least among ST households followed by SCs and BCs while it is highest among OCs.

V. AGRICULTURAL SITUATION

20. Agriculture is the primary occupation for over 98 percent of the total affected households both among PAPs (1579) and OAPs (6629) under irrigation infrastructure as well as PAPs (29) under ayacut roads. The land holding distribution before and after acquisition periods shows that about 82 percent of the total households belong to small and marginal farmers and 93 percent among PAPs are small and marginal farmers. The land acquisition has affected badly the small and marginal farmers by drifting 5.25 percent of them (431 households) into landless category of whom 209 households are PAPs. About 5 percent of the PAP households have suffered from the loss of total economic base with
57 households becoming landless exclusively due to acquisition while the balance 152 households turned landless after disposing of their remaining piece of land due to economic compulsions. The average size of the holding was 3.54 acres prior to acquisition which declined to 2.96 acres after acquisition. In case of PAPs it was 1.87 acres prior to acquisition and 1.19 acres after acquisition. In case of ayacut roads only one farmer out of 29 PAP households has drifted to landless category where 83 per cent are small and marginal farmers.

The total acquired area among the surveyed households is 4213.81 acres showing an average per capita loss of 0.51 acres under irrigation infrastructure while in case of ayacut roads it was 0.15 acres per household showing that the land acquisition under irrigation infrastructure has drastically affected the households and its impact in case of ayacut roads is marginal. Dug wells is a major source of irrigation among the affected households and the area under irrigation has increased from 20454 acres to 21869 acres after acquisition due to increased number of bore wells after acquisition. While there is overall improvement in irrigation among PAPs the area under irrigation is in fact reduced from 2648 acres to 2213 acres though the overall area under bore wells has trebled.

21. The total operational holding which was 29584.05 acres prior to acquisition has dropped to 24692.30 acres after acquisition showing a reduction of 20 per cent in operational area. On an average it has shown a reduction of 0.60 acres of operational area while the actual loss was 0.51 acres due to acquisition which is substantial when the average size of the holding was 3.60 acres which fell to 3.09 acres after acquisition. The major crops grown by the respondents are paddy, cotton and chillies. The commercial crops-cotton, chillies and turmeric together constitute 50 per cent of the total cropped area since the area is endowed with black and black cotton soils in over 40 per cent of the study area which are highly suitable for growing remunerative commercial crops. The overall cropping intensity is 114 per cent while among PAPs it is 113 per cent and OAPs 115 per cent. The highest cropping intensity of 120 per cent is observed among STs. The production in the overall households of all the crops put together was 270851 quintals before acquisition which was reduced to 242538 quintals showing a production loss of 28313 quintals after acquisition. The land acquisition did not affect per acre crop productivity.

22. The land acquisition in the area has its impact on land holding distribution where substantial number of holdings were reduced to lower levels and many have become land less after the acquisition. It has also created a slight decrease in the overall irrigated area under dug wells though there is considerable increase of area under irrigation under bore/tube wells. This increase is witnessed especially in DMB-40 and DMB-48 where the affected households have invested part of the compensation for irrigation purposes since the compensation received by them was said to be at a reasonable level and awarded mostly by consent awards by GOAP. The operational area has also come down among the affected households though there is not much of change in the cropping pattern after the acquisition. Similarly the land acquisition did not show significant effect on the cropping intensity which more or less remained same in both the periods in almost all the distributories among PAPs and among SCs, STs, BCs and OCs. However, the total production loss of all the households under canal infrastructure due to acquisition is estimated at 28313 quintals which is quite high and the average production loss per household is estimated at 3.42 quintals on the average acquired area of 0.51 acres and in case of ayacut roads it is 0.992 quintals. In terms of monetary value the loss of crop production income to the affected households on an average is Rs. 3156 under canals and Rs. 915.52 under ayacut roads and in case of PAPs it is as high as Rs. 5870 under canals and Rs. 2040.53 under ayacut roads which is substantial particularly when majority of them are marginal and small farmers mostly falling below poverty line. Therefore, this situation calls for reasonable rehabilitation support to the affected households atleast for those defined as PAPs.
VI. ECONOMIC CONDITIONS

23. Agriculture is the major occupation for over 90 percent of the households affected under land acquisition in the study area. Over 92 percent among PAPs and about 94 percent among OAPs depend on agriculture alone. A drop of 2.66 percent in cultivators among PAPs, 0.58 percent in OAPs and 0.78 percent in overall households affected under canal infrastructure is visible after acquisition. In other words, land acquisition has caused drift of substantial number of cultivators into agriculture labour. In case of PAPs 5 percent of households (209) have become landless after acquisition though the actual number that turned to agriculture labour is only 57 due to acquisition. The other PAP households (152) have become landless after disposing off their remaining meagre holdings due to economic compulsions. The overall size of the holding has come down to 2.96 acres from the average size of 3.54 acres prior to acquisition and in case of ayacut roads it fell from 1.89 acres to 1.19 acres but the land acquisition except in one case under ayacut roads did not cause displacement of cultivators shifting them into wage labour.

24. Among the total family members 56 percent are workers 81.88 percent of whom are cultivators, 9.81 percent wage labour employed in agriculture and non-agricultural occupations and the balance 8.31 percent in other avocations. Average number of 2.62 members per family among PAP households, 2.77 members in OAP households and 2.74 members in overall households are employed.

25. Slight improvement in housing is observed among the households after acquisition. 39.64 percent are kutch houses with thatched roof and mud walls, 55.54 percent are medium type of houses and 1.64 percent are pucca houses with concrete slab. A drop of 0.63 percent in kutch houses and increases of 0.5 percent in medium type houses and 0.14 percent in pucca houses is observed among the households implying that some of the households have spent part of the compensation amount for improving the housing conditions.

26. The livestock among overall households from 291.14 livestock heads per 100 households prior to acquisition has risen to 297.32 heads after acquisition showing slight improvement in livestock position of the households. But in case of PAPs the position remained unchanged. Among PAPs under ayacut roads there is no change in the livestock position before and after periods of land acquisition.

27. As regards agricultural implements though there is no increase of implements and equipments numerically in many items, the number per 100 acres of operational area has improved since the operational area of the households has come down after acquisition. Only in case of tractors and MB ploughs increase in both numerical and per unit basis is noticed after acquisition perhaps due to some entrepreneurial farmers purchasing tractors by diverting part of the compensation received.

28. Income from agriculture constitutes 86 percent of the total household income. Wage labour and income from all other occupations contribute 3.6 percent and 7.9 percent respectively. The annual average household income in overall households has shown 7 percent increase after acquisition which is attributed to generation of employment opportunities in construction of irrigation infrastructure. In case of OAPs an increase of 8.95 percent annual income is observed while there is fall of 2.32 percent annual income among PAP households after acquisition.

29. In case of PAPs under ayacut roads slight fall of annual income (Rs.495) is observed due to fall in crop production among the households.

30. In absolute terms the increase in both consumption and production expenditures is observed among PAPs and OAPs showing an overall increase of 23.27 percent after land acquisition. While there is significant increase of percentage of consumption expenditure, a dip in percentage of production expenditure is observed indicating that land acquisition has created economic hardship to the households. The overall percentage variation of annual income over the prior periods shows that the reduction in surplus income to the household is 50.87 percent after acquisition while it is 82.5
percent in PAPs and 46.06 percent in OAPS. This shows that the increase of annual income is eclipsed by the increased annual expenditure among the households.

31. In regard to utilisation of compensation, about 5 percent (411) in overall households have made investments on purchase of land incurring an average amount of Rs.36460 and a total area of 559.71 acres was purchased by them. 94 households (5.95 percent) among PAPs and 317 households (4.78 percent) among OAPs, have made investments on land.

32. Out of 8208 surveyed affected households, 24.72 percent of the overall households are falling Below Poverty Line (BPL) earning less than Rs. 11000 annual household income. Among PAPs 40.98 percent and among OAPs 20.85 percent of households are below poverty line. Poverty among SCs, STs and BCs is more pronounced compared to OCs-the advanced castes. The area being in good rainfall zone endowed with predominantly black and black cotton soils, has good crop production potentials besides its suitability for commercial crops like cotton, chillies, turmeric apart from paddy, the predominant cereal crop in the entire area. Perhaps because of the favourable prevailing conditions, the poverty among the households is comparatively lower than the state average of about 35 percent. However, the impoverishment among these rural households and in particular among the PAP households has to be tackled immediately on war footing and immediate rehabilitation assistance rendered.

33. The land acquisition has caused alienation of land to a considerable degree and also had its adverse impact on the annual income levels of the households and pushed some of the farmers into land less category. While this is the unavoidable and unfortunate aspect of land acquisition in this developmental irrigation project it has made slight improvement in housing, livestock and investments on productive assets like land, which should not be missed sight of. However the most affected lot under land acquisition are the households who need urgent rehabilitation support to regain their economic status and reach their prior levels of living standards.

VII. WOMEN'S PERCEPTIONS

34. The overall responses of women indicate that the land acquisition has generally affected the social status of the family and created economic hardship to the family (74 per cent). However, most of the women (92.9 per cent) expressed their willingness for land acquisition keeping in view the future benefits like appreciation of land value, higher crop production and productivity and better living standards.

35. The land acquisition has also created shortage of fodder and firewood (0.55 per cent) besides creating difficulties in fetching firewood. Some women (6.56 per cent) have also felt that the cultivator before acquisition was turned into landless labourer after acquisition. Many women (40 per cent) expressed their aspirations in doing business by sale of goods, flowers, vegetables or establishing a tea shop, petty business and also tailoring. Some women (30 pr cent) expressed the need for skill improvement. Many women (96 per cent) expressed that they were not getting any benefits through Anganwadi centres either for them or for their children, which calls for a critical look into the functioning of Anganwadi centres for their better performance in catering to the needs of women and children. Majority of women have also expressed (95 per cent) that they have equal status with men in the family and they have decision making powers (85 per cent) in children’s education, marriages, purchase and sale of property but most of the women (87 per cent) do not have any role or participation in village development activities. Formation of women groups under thrift and economic oriented programmes would activate the empowerment of these project affected rural women.

VIII. PROJECT PERCEPTIONS

36. The project has created both positive and negative dimensions of impact on the affected households. Most of the tenant cultivators having their own land expressed that their balance land remaining after acquisition had become uneconomical and they had to shift to other avocation/others' land. The impact of the livestock and fodder is minimal. However, the compensation provided has enabled the households (28.7%) to invest in agriculture, house (5%), repayment of loan (28.8%).
marriages and social ceremonies (21.7%) though compensation is not adequate to regain their earlier economic status. About 60 per cent of the households are not satisfied with the compensation, 92 per cent are not happy with their land cut into two pieces in most of the cases (57 per cent) creating problems of reduction of extent of area and difficulty in movement of carts. However, majority of the farmers (70 per cent) anticipate appreciation of land value, enhanced crop yields, improved crop production, increased income levels and generation of employment as benefits under the project.

37. Impoverishment: While the above are the positive aspects of the project the land acquisition has deepened the crisis of poverty among households with 21.95 per cent of BPL households prior to acquisition rising to the level of 24.72 per cent, with a percentage variation of 12.62 per cent of impoverishment among these poverty stricken households during before and after periods. The households Below Poverty Line among PAPs which were 34.26 per cent prior to acquisition has risen to 40.98 per cent after acquisition while among OAPs the BPL households are 19.02 per cent and 20.85 per cent before and after periods respectively. The variation of rate of impoverishment among PAPs is 19.61 per cent which is relatively on higher side compared to the rate of variation of 9.62 per cent among OAPs. The impoverishment of the rural poverty among PAPs needs to be tackled on priority without any time lag.

IX. SOCIO-ECONOMIC FEATURES

38. The principal religious groups in the study area are Hindus who are numerically more and muslims and christians are in minority. Telugu is the spoken language by large population while lamibadi comes a second followed by Urdu, Hindi, etc. The process 'of sanskritisation' can be seen among Hindus in this area leading to a blurring of the frontiers between one caste and another. Among tribals, lamibadas are in predominant number followed by koyas, gonds, chenchus and konda reddy's, etc. The old tribal customs and beliefs are still the backbone of their culture. Many of the lamibadas have settled as prosperous cultivators, herdsman, itinerant traders and industrial workers. The joint family system has weakened considerably. The abolition of jaghirdars, the ceiling on land have shaken the roots of joint family. With the abolition of the jaghrs the tiller of the soil becoming its owner, an almost revolutionary change in the class structure has come about. The jaghirdars also have largely disappeared as a class and tended to take to other professions and trades. The loosening of the caste system (with its rigid notions of high and low) has also greatly added to the transformation of a feudal and ascriptive society into a more egalitarian structure.

39. Despite a marked change in the economic status of women, the broad picture is that they continue to be dependent.