

AGRICULTURE AND POWER

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In the name of reforms the direction of agriculture development is sought to be reoriented. The orientation will not be towards meeting the food needs of the people of this country meeting the demands of external markets. Hunger of the people of this country is no longer going to decide the path to be taken by the agriculture sector. Rather it will be hunger for the foreign exchange. This orientation already played havoc with agriculture of many African and Latin American countries. These experiences did not make any dent on the thinking of the policy makers at the World Bank who are recommending these changes. These experiences also did not affect the sensibilities of our own rulers both at the centre and the state. Even before the central government finalized its agriculture policy the state government of AP under the darling of reformers N. Chandrababu Naidu already finalized the blue print of reforms in agriculture sector.

The new market oriented paradigm relegates to the background all the concerns like the food security of the masses and envisages a programme for invasion of the agriculture sector by the corporate houses. It strives to create conducive environment for their investments. Corporate/contract farming is being encouraged at the cost of small and marginal farmers. In keeping with its policy of market friendly reforms along with the outputs, for agriculture inputs also extensive markets are being created. Encouragement to mechanization and leaving the extension services also to the whims and fancies of the market are part of this policy exercise. The policies related to infrastructure that have bearing on agriculture growth are also being formulated in the same mould. The policy related to the power sector reforms is a case in point.

Agriculture sector in AP is being turned into a stage to propagate virtues of liberalization and market oriented policies under the guidance of the World Bank advisors. The traditional farming is to yield its place to the so-called scientific farming. Subsidies will become things of past and market prices will rule the roost. Value addition will be the motto and credit facilities will chase agriculture processing rather than agriculture production. Agriculture labour will be an input, not human endeavour. Under the influence of liberalization the face of agriculture is going to change.

If at all the vision of the present AP government is to succeed, at the end of another 25 years, it will lead to 40% of the population of the state living on agriculture will be made to depend on 12% of the income generated in the state. This will result from costly displacement of some people from rural to urban areas, as far as reduction of proportion of people dependent on agriculture, and also exit of farmers, particularly small and marginal farmers, who will not be able to withstand new regime of agriculture practices, from self cultivation and ending up as full-fledged labourers. Given the logic of emerging agricultural practices farmers forego control over their resources. Added to this will be new policies related to infrastructure input like power will be beyond their reach as the subsidies are being rolled back in the name of efficiency and economy.

Infrastructure

The reform process that forms the core of the state government's vision, informs its approach towards all the sectors of the economy. Also reforms envisaged in one sector has its impact on other sectors also. This is more so in the case of infrastructure sector and its relation to agriculture. The policies being followed in the infrastructure sector as a part of this Vision will impact on the agriculture sector. In the changed policy milieu, cutting across all sectors, the government will not be the 'provider' of services but will be 'facilitator' of private sector involvement. The Vision aims at reforming the infrastructure to make it feasible for both public and private players to provide infrastructure.

An important contention of the Vision document is that infrastructure facilities provided by the government agencies is inefficient as they are run as monopolies and there is no incentive to improve performance because of lack of competition. Market being efficient – all the ills are traced to state ownership. The Vision, as far as the infrastructure sector is concerned, consists of replacing the 'inefficient, unresponsive, incapable' public sector with 'efficient, responsive and capable' private sector and create conducive atmosphere for its profitable operation. The necessity contain fiscal deficit is shown as one more reason for the government to give in to the private sector. And this is the staple advice of the world bank irrespective of the prevailing conditions. Same is the case with the state of AP.

The Vision document contends that the government's subsidies to the underprivileged is coming in the way of economic development and its regulated prices are discouraging private sector participation. According to it, "Since the government's role as provider for all groups, particularly the underprivileged, has overridden economic priorities, the prices of many infrastructure services are subsidized and often do not reflect the cost of providing them. This has disrupted the economics of the sector. Investment does not generate returns, cutting off a source of profit for the government and making it difficult to attract private investment in the area". In order to set the things right it recommends rationalizing price structure: "Therefore to make it feasible for any party (whether the government or the private sector) to provide infrastructure in an economically sustainable way,... rationalize pricing and budget allocation systems so that prices reflect economic costs, thus making the sector attractive to investors". It contends that price reform is critical to making the infrastructure viable. To improve investor confidence it recommends 'rational' pricing of services/levying user charges to reflect the economic cost of providing them, and focusing subsidies and structuring them as transparent transfers from the state budget to a given utility. These measures have grave implications for agriculture.

In developing countries we are being advised to minimize the role of the government in the economic sphere. But a look at the developed countries shows that there the governments have even greater role compared to the developing countries. Many industrialized countries have privatized key infrastructure areas very little, but have done very well in terms of its provision. For example, in 1995 both France and Germany had no private investments in telecommunications infrastructure, France had no private sector involvement in its power sector, Germany had no private involvement in transport, and Japan also had very little private sector involvement in transport and none in water and sewerage systems. Overall, the weighted average of privatization in infrastructure investment for France was only 13%, for Japan 14% and for Germany only 9%. (Malhotra, 1998, P.2). In 1992 while in India the government expenditure accounted for 16.8% of GNP, except Japan all other developed countries accounted for more

than this. The proportion of GDP spent by the governments in the high income countries is more than that of the lower income countries. If the government spending is inherently inefficient these developed countries would not have been as developed as they are and the backward countries would not have been as backward as they are .

The market failures are in no way infrequent than non-performance of public sector units. Even after all the technological changes, privatization of infrastructure in practice leads to the creation of private monopolies which cause market failures. This means that the search for solutions must go beyond the market forces. If the services of this sector are completely left to market forces it will lead to denial of these basic services to many marginal groups. A large section of the people in developing countries like India do not have the capacity to access these through the market. And it becomes the duty of the concerned governments to address the needs of people vis-à-vis these infrastructure facilities. These cannot be left to the mercies of market forces. Also, while the success of the private units profited a few, the success of public sector units conferred benefits to larger sections of people.

If prices of the services are to be 'rationally' fixed to make them sufficiently attractive for private investors to provide 'efficient' services it will lead to escalating tariffs that will keep the services beyond the reach of ordinary masses. If left to market forces these services to remote rural areas will not be provided at all or be provided at a relatively high and unaffordable cost so as to exclude the poor and the disadvantaged groups. The argument that the poor are willing to pay for privatized utilities and social services is not borne out by empirical evidence. This is simply because even if the poor are willing to pay they do not have the ability to pay in practice. If they are forced to pay in many privatized infrastructure regimes, it is often at an unacceptable social or economic trade-off. (Malhotra, 1998).

If any segment of the sector still remains unattractive and unprofitable to the private sector it is to be left in the lap of the public sector. The unfolding reforms in the infrastructure sector also show that the "public sector continues its investments in some sectors where the private sector is not likely even to be interested, and gets out of any sector where the private sector is in a position to make a profit", and "this is simply a scenario in which the private sector picks up all the profits and the public sector is left bearing all the risks and losses" (Jayati Ghosh et al, 1997, P.807-808. In the name of making the infrastructure sector attractive to the private sector on the one hand infrastructure services will be 'profitably priced' affecting the users and on the other hand government, while retreating as investor to provide space for private participation, will be forced to concede more and more concessions to them affecting its own financial health. In other words, it is the public subsidy of the private sector.

Power Sector Reforms

Unlike many issues dealt with in the Vision document, power sector reforms transcended the borders of vision/dream and became reality with the launching of AP Power Sector Restructuring Programme (APPSRP) with the assistance of the World Bank, limited financial assistance, but unlimited policy assistance. This is being implemented parallel to the structural and fiscal reform programme: AP Economic Restructuring Project (APERP). Both the Bank and the GOAP considered the reform in the power sector as the single most important aspect of structural and fiscal reform in the state, and hence it is being carried out along with the broader and multi-sectoral adjustment programme. The underlying broader development objective of the APPSRP is to bring about a permanent shift in public expenditure in the power sector, from a

major drain on the budget to a contributor of funds for social sectors and other priority areas for public investment.

This reform programme, covering a 10-year period, aims at establishment of a new legal, regulatory and institutional framework, functional un-bundling of the system, corporatisation of sector entities, privatization of the distribution business, tariff reforms. Through these changes it plans to achieve reliable, high quality and cost effective electricity supply, higher customer satisfaction and deepening of power sector reforms to increase competition and private participation.

The reforms aim at removing dependence of electricity utilities on Government budgetary assistance, and ensuring that while Government may continue to direct and determine the overall policy framework for the power sector as a whole, it withdraws from regulatory functions. Establishment of a regulatory framework is meant to insulate the power sector from external influences, to reduce the interference of the state govt; minimize the politicization of key sector decisions (for example on tariffs). It was pointed out that the root cause of the crisis engulfing the power sector is the pervasive politicization of most decisions affecting APSEB's operations and expansion, and the resulting lack of commercial orientation in its functioning. Subsidies are spiraling up because of political interference in the running of APSEB. The only way, according to them, to reduce subsidies and consequently losses to keep APSEB, power sector away from political interference.

It was argued that given the deterioration of its fiscal situation and determination to shift public expenditure towards social sectors, it is no longer possible for the govt to fund APSEB's losses and support the development of the power sector. The state's power requirements cannot be met without a massive mobilization of private financing. Substantial expansion of supply through private power producers is not possible without restoring the creditworthiness of energy off-takers.

The ultimate objective of the reforms is for the govt to withdraw from power sector as an operator and regulator of utilities and to have commercially operated, largely privately owned utilities functioning in a competitive and appropriately regulated power market.

It is the tariff policy ingrained in the reform process that affects the agriculture the most. It looks down upon the subsidies as the main culprit in distorting the rational functioning of the economy. It expects the agriculture sector to pay for the electricity services full cost of supply as the industry can no longer bear higher tariffs. As an initial step it intends to increase the tariff rate to agriculture to at least 50 paise/kwh. And these tariffs will continue to be adjusted to cover costs and reduce cross subsidies. According to this reform programme no sector shall pay less than fifty per cent of cost of supply of electricity within three years of setting up of the Electricity Regulatory Commission, and it is the duty of the Commission to see that tariff is fixed in this manner. As the World Bank conditionalities indicate the state government has already committed itself, through a financial restructuring plan for APSEB, to hike the tariffs the same is kept as a closely guarded secret. (World Bank> 1999. p.12). Another condition specifically stipulates that APTRANSCO shall adjust tariffs and take other measures so as to produce revenues from all sources sufficient to cover all expenses that includes a return on equity of not less than 16 percent or such rate as may be permissible under Electricity Act or prescribed by the Regulator, whichever is higher (World Bank. 1999.p.34). If the State

government decides to deviate from this tariff, the financial implications of such deviation were to be explicitly provided by the State Government in the State budget.

As a result of the restructuring of the sector that is taking place under the reforms power tariff is going to increase and mount growing burden on the people. According to the reform proposals the board has to be divided into separate companies dealing with generation, transmission and distribution of power and each company is expected to generate profits. When all units are together profits are calculated on the total capital. If profits are to be calculated separately, profits of one company appear as cost of production/service for another company, the cost of power by the time it reaches the consumer will increase.

The indications show that cost of power is going to increase at the generation level itself. Cost of production of one mw of power in APSEBs Kothagudem new unit is estimated to be Rs.2.7 crores. In the case of private sector GVK Industries, Krishnapatnam plant it is Rs.4 crores. According to it the original estimate GVK's Jeegurupadu was to cost Rs.816 crores for a 400 MW plant at 1993 rates of exchange, but this went up to Rs.816 crores for a 400 MW plant at 1993 rates of exchange, but this went up to Rs.816 crores for downsized plant of 216 MW. As a result of this cost went up to Rs.3.74 crores per MW of installed capacity from Rs.2.04 crores. Similar is the case with the Kakinada plant of Spectrum's. This is even in the background of falling power plant prices since 1994 due to surplus capacity in the industry.

According to the power purchase agreements entered by the APSEB with private companies average cost of power per unit in 1996-97 is 240 paise, i.e., cost of power has already doubled. But as shown by the reports of the Comptroller and Auditor General (CAG) APSEB was paying more than what it has agreed under the PPAs. In the case of GVK's Jeegurupadu plant, at the time of PPA the tariff was fixed at Rs.2.05 per unit at PLF of 68.5 percent. But the State Government ended up paying Rs.2.19 per unit even when PLF was 90%. APSEB paid 17.17 percent as return on capital instead of stipulated 16 percent. In the case of Spectrum's Kakinada plant APSEB was paying per unit of power at the rate of Rs.2.46 while in fact it should have been Rs.2.22 only. Added to this PPA is being implemented in such a way as to benefit the developers and to the disadvantage of the APSEB. This shows that these projects, far from reducing burden, are causing losses to the state exchequer crores of rupees. Besides this consumers are to be saddled with higher tariffs.

But, this is not enough. In the opinion of the consultants of the World Bank the tariffs are very low. The tariff should be Rs.3 for the agriculture sector and Rs.5-6 for other sectors. This will take average tariffs to Rs.4.50. In the case of Orissa with the implementation of reforms power tariff increased by 45 percent within a span of two years.

As the government is not inclined towards raising tariff for industrial and commercial consumption the agriculture sector will be forced to bear the burden of tariff hikes. The issue is whether the farmers, particularly medium, small and marginal farmers has the strength to weather these changes.

APSEB and Agriculture Sector

Extension of power distribution network to even interior villages and energisation of irrigation pump sets contributed to a great extent to increased production food grain and attainment of food security. The number of energized pump sets increased according to the APSEB figures, from 3

lakhs in 1980 to 18.24 lakhs in 1997-98. As a result of this area under well irrigation doubled during the same period. Net sown area under well irrigation increased from 8.38 lakh hectares in 1983-84 to 16.76 lakh hectares in 1997-98. In 1983-84 well irrigation accounted for 21.61 percent of the total irrigated area. This increased to 42.5 percent in 1997-98. Compared to other sources of irrigation area under well irrigation consistently increased, the limiting factor being good rains assuring enough ground water. During the same period there were serious fluctuations in the area under tank irrigation. While it stood at 10.87 lakh hectares in 1983-84, it was 5.63 lakh hectares in 1997-98. Canal irrigation also experienced decline. It declined from 18.39 lakh hectares in 1983-84 to 15.38 lakh hectares in 1997-98.

Even more significant aspect of this spread of well irrigation is that this growth in well irrigation took place mostly in backward areas like Telangana, Rayalaseema and north Coastal areas where the scope for canal irrigation is limited. In Telangana area under well irrigation increased by 167 percent between 1981-82 and 1997-98. Within this area Warangal district registered 324 percent growth rate, Adilabad 315 percent, Nizamabad 248 percent, Khammam 189 percent, Karimnagar 137 percent, Nalgonda 118 percent, Mahaboobnagar 101 percent. Coastal region registered 86.10 percent growth in area under well irrigation during the same period. In the North Coastal districts of Srikakulam, Vizianagaram and Visakhapatnam area under well irrigation increased by more than four times. In the remaining districts of the region East and West Godavary districts witnessed a growth of 146 and 93 percent respectively. Compared to these two regions Rayalaseema region witnessed a lower growth e.e., 75 percent. Within this region Kurnool district registered a growth of 400 percent. In the remaining districts of this region well irrigation is already widespread. In 1981-82 it accounted for more than 50 percent of the irrigated area. Besides this precarious ground water availability might have come in the way of further expansion of well irrigation. This expansion in well irrigation would not have been possible without the availability of power at subsidized rate. One has to recognize the contribution of energisation of irrigation pumpsets to expansion of irrigation in these backward areas where the scope for canal irrigation is minimal. Any escalation in power tariff will have far reaching impact on well irrigation and on the lives of nearly a crore of population who depend on well irrigated agriculture.

This made possible increased food grain production to meet the nutritional needs of increasing population. If the pump sets were not energized achievement of food security might have been in doubt. Besides contribution to food production it enlarged livelihood opportunities to the people from backward regions. It provided succour to nearly a crore of population.

Whenever the issue of losses crop up the government and APSEB officials point their accusing finger at the agriculture sector. They argue that because of the subsidies given to the agriculture sector the Board has landed in losses. While the agriculture sector is consuming more power than any other sector, it provides least proportion of revenues. It is the industrial sector that provides bulk of the revenue. The gap between production cost and income generated through the sale of power widening. In 1992-93 sale proceeds could cover only 94 percent of the production cost. It declined to 66.58 per cent in 1994 – 95. the losses are mounting as power is being diverted from industrial sector to agriculture sector. In 1985-86 while agriculture sector consumed 28.8 percent of power distributed, industrial sector consumed 54.8 percent. In 1994 – 95 while power consumed by the agriculture sector increased to 47.8 percent, that of the industrial sector declined to 29.1 percent. Subsidies to the agriculture sector cost Rs.162.3 crores in 1985-86. this increase to Rs.1733.88 crores in 1997-98. But the question is how far these figures are reliable.

Impact of the changes

Before we look at the veracity of these figures we shall examine the impact of these changes on agriculture.

The liberalization and structural adjustment programmes are going to cost agriculture sector heavily. As a result of rolling back subsidies in the name of restoring rational price mechanism prices of all inputs used in agriculture viz. fertilizer, pesticides, seeds, implements are increasing. Now in the name of power sector reforms power tariff for agriculture is being hiked. Already credit facilities for agriculture are declining fast. This will impose enormous burden on the farming community. When the agriculture product imports are opened the prices are expected to decline complicating the situation for the farmers. Small and marginal farmers will be the most affected as they lack in resource capability. For the farmers hailing from the backward regions, who for irrigation largely depend on well irrigation, the problem will be compounded.

We examine the impact of proposed tariffs with an example of paddy, which is the crop predominantly cultivated under irrigation.

Table – 1

IMPACT OF TARIFF CHANGES (Paddy/per acre)

Tariff	Present	@ 50 ps per unit	@50% of cost	@full cost (Rs.2.14)
Power Charge(Rs)	150	1050	2250	4500
Total Cost (RS)	5150	6050	7250	9500
% of power charge in total cost	3	17.35	31.00	47.37
% of increase in total cost	--	17.48	40.78	84.47

In the above table impact of changes in power tariff on paddy cultivation is presented. Here paddy crop is taken as an example. Power consumption per acre of paddy cultivation is taken as 2100 units. Power consumption per acre of paddy cultivation is taken as 2100 units. While calculating total cost of cultivation land capital values are not taken into consideration. This aspect is significant in the case of well irrigation where, unlike under surface irrigation, much of the investment in digging and energizing the well comes from the farmer. On average it costs Rs.40,000 on each well. Gross revenue per acre of paddy cultivation, with productivity at 18 quintals per acre, is put at Rs 9200. If land and capital values are also taken into account there will be no surplus left for the farmer. If the power sector reforms as far as agriculture sector are to be carried out fully farming as an activity will become unviable. The above table shows that as a result of these measures proportion of power tariff in total cost of cultivation will increase from 3 percent at present rate to 47.37 percent if supply cost of power as given by the TRANSCO is taken. Similarly, cost of cultivation will increase by 84.47 percent. If the increasing costs of

fertilizers in the wake of this years central budget and other costs are also taken into account the cost of cultivation will spiral up further. At the same time the prospects of prices of agricultural products increase is very bleak given the opening up of trade and escalating imports.

Recent spate of suicides of farmers provides a grim reminder of the things going to happen if the present reforms are not halted. According to the report of the people's Tribunal on farmers' suicides out of 60 families that deposed before it except 18 of them, others have open wells or bore wells. Failure of government to provide financial support for digging and deepening of irrigation wells has forced these farmers to incur heavy debts. This is one of the factors that broke their backs. If the power tariff is to be increased as suggested under the reforms on can well imagine the outcome.

In this context it will be pertinent to underline the caution sounded by the People's Tribunal: "It is therefore very necessary for the government to intervene in agriculture. Unless the government invests and creates the required facilities, the small and marginal farmer cannot be assured of a share in the development pie. Encouraging marketisation without taking these measures would only benefit agribusiness interests and to some extent the big farmer. The policies of marketisation could be a noose around small farmer's neck".

Table – 2
POWER CONSUMPTION IN AGRICULTURE SECTOR

Year	No. of Agrl. Connections	Power Consumption	Average Rate (PS/PU)	Cost per Unit(LT) (PS/PU)	Loss per Unit (PS/PU)	Total loss on Agrl. Consumption (Rs in Crore)
1983-84	579286	1540	9.21	68.08	58.87	90.66
1984-85	636003	2354	6.12	60.63	54.51	128.32
1985-86	724715	2569	5.74	68.93	63.19	162.34
1986-87	819523	3347	4.87	68.90	64.03	214.31
1987-88	936758	3980	4.72	70.68	65.96	262.52
1988-89	1036484	4461	4.28	77.03	72.75	324.54
1989-90	1111569	5276	4.22	84.88	80.66	425.56
1990-91	1193363	6285	2.88	88.90	86.02	540.64
1991-92	1273972	6972	3.28	102.90	99.62	694.55
1992-93	1398049	7894	8.10	117.83	109.73	866.21
1993-94	1504975	9022	6.40	126.74	120.34	1085.71
1994-95	1605807	10922	5.27	154.22	148.95	1626.83
1995-96	1642993	11399	2.81	172.50	169.69	1934.30
1996-97	1821291	7835	13.52	183.95	170.43	1335.32
1997-98	1824689	9336	16.12	201.84	185.72	1733.88
1998-99	1884678	9500	16.88	231.00	214.12	2034.14

Source: APTRANSCO.2000 Transmission Corporation of Andhra Pradesh: Factual Position.
And, 1999. Power Development in Andhra Pradesh – 1998-99.

Table – 3
DISTRIBUTION OF ELECTRICITY

Category	1980-81	1990-91	1995-96	1996-97	1997-98	1998-99
Power Distributed. MU	6915	20233	29457	32.92	36358	38721
Industry. MU	3363	7042	7798	8207	8595	8655
Percentage	48.63	34.80	26.47	25.57	23.64	22.35
Agriculture. MU	915	6285	11399	7835	9336	9866
Percentage	13.23	31.06	38.70	24.41	25.67	25.48
Domestic. MU	546	2079	3276	3801	4535	5090
Percentage	7.90	10.28	11.12	11.84	12.47	13.15
T&D Losses. MU	1523	3978	5551	10281	12020	12312
Percentage	22.03	19.67	18.85	32.04	33.06	31.80

Source: Power Development in Andhra Pradesh – 1998-99

Over estimation of agricultural consumption

It has been alleged that it is the high consumption by the agriculture sector is the culprit behind the decline of power sector in AP. The subsidy provided to the irrigation pump sets is draining the resources of the APSEB. But an examination of the sector shows that the picture is otherwise. As the agriculture sector consumption is not metered the consumption of this sector is arrived by elimination process. From the distributed energy, the energy consumed by the metered sections is deducted. From this difference the energy that the Board wants to show as T&D loss is deducted. The remaining power is shown as consumed by the agriculture sector. No scientific method is used to arrive at the magnitude of T&D losses. Amulya K. N. Reddy and Gladys D. Sumithra's comment on Karnataka situation holds good for Andhra Pradesh also: "Unfortunately, the technical losses have not been measured or derived from the T&D system diagram by standard electrical engineering computations. Instead, all the T&D losses (including the technical losses) are being obtained as a residue. That KEB's assignment of T&D losses is suspect follows from the fact that, from 1984 to 1994, its reported T and D losses are decreasing even through the ratio of LT loads is increasing even though electrical engineers know that, in the absence of major system improvements, T and D losses should increase with an increase in the share of LT loads" (1997: 589). In order to show that the Board is running technically very efficiently they had shown very low T&D losses. The T&D losses that stood at 23.08 percent in 1981-82 gradually declined to 18.85 percent in 1995-96. Consequently, the magnitude of agriculture consumption is shown to be high. As a result of this calculation commercial losses/theft of power and also some part of T&D losses were shown as being consumed by the agriculture sector. APSEB uses the agricultural supply to hide many of its technical and commercial shortcomings, in particular its commercial T&D losses. It was estimated that these losses account for 20 to 30 percent over and above the given figure. If these losses are taken into account then the proportion of power consumed by the agriculture sector will be low, lower than 47.8 percent in 1994-95. consumption by the agriculture sector may be as low as 23 percent. No wonder that total blame is laid on the farmer for wasting of energy.

The consumption in the agriculture sector is overestimated. This starts with the number of irrigation pumpsets (IPS). According to the APSEB there are 18.24 lakh IPS in the 1997-98. this number stand for all the sets energized since the time of the formation of the board in the year 1959. from this list sets that are disconnected and cancelled for various reasons are not removed. According to an estimate out of these registers IPS the operating sets are about 13.65 lakh. If one lakh unregistered sets are added to these total IPS operation in agriculture sector are around 14.65 lakhs during the year 1997-98 (M.H.P. Rao, 1999). It is also to be recognized that for various reasons all these energized sets are not available for operation round the year.

M. Hariprasad Rao, an expert in power sector, felt that power consumption was under estimated in metered sector and over estimated in non-metered sector, i.e., agriculture sector. According to his estimates 8 per cent of the meters are not functioning, 15 percent of the meters are not sealed and 15 percent of the meters are not recorded properly. In total 38 percent of the meters can not be relied upon. Because of these 10 percent of the power produced is not reaching the consumers. But this is shown as consumed by the agriculture sector. He also pointed out that the government overestimated the number of pump sets by 25 percent, working hours (1620 hours) in an year by 33 percent and power consumption by one 5HP motor (4.55 units) by 20 percent. Because of all these power consumed by the agriculture sector was shown to be two times more than its actual consumption. According to him proportion of power consumed by the agriculture sector may be 25 percent, but not 47.8 percent. According to his losses in transmission and distribution are 25.5 percent higher than the government estimates. He pointed at that even Board officials accepted that power theft in metered sector is 200 percent more than the estimated one (The Hindu, September, 5 1997). As the pump usage is overestimated, the effective tariff is underestimated. Based on these false premises government intends to bring far reaching changes in the power supplied to the agriculture.

According to an estimate agricultural sector energy consumption in all the districts of AP state in the year 1996-97 is about 5,213 MU. This includes likely theft in that sector. If one assumes even the same rate of consumption during the next year i.e., 1997-98 for the same number of sets, the consumption in agricultural sector cannot be higher than 5222 MU in fact, the Chairman of APSEB has said during a press conference on 8th November 1997 that the maximum demand for the year in agricultural sector will be 5,398 MU. Actual supplied energy may be less than 5,398 MU. (MHP Rao, 1999). As opposed to this the consumption of agriculture as shown by the APSEB for the year 1996-97 is 7835 MU and for 1997-98 is 9336 MU. The difference is 2622 MU (50.30%) and 3938 MU (72.95%) in 1996-97 and 1997-98 respectively.

According to a APSEB study in 1996 agriculture power consumption may range about 5,100; 5,749; and 5,702 MU depending on three methods of estimation – (a) making a computation from the cropping pattern and crop wise water requirement, (b) from a sample of metered data on IPS consumption, (c) multiplying the average HP of the entire population of IPS by usage o hours. But according to official figures agriculture power consumption was 10,922 MU in 1994-95 and 11,968 MU in 1995-96. All this shows that the figures for agriculture power consumption is inflated.

Between 1983-84 and 1997-98 area under well irrigation increased by 100%, number of pump sets increased by 215%, and power consumption in agriculture increased by 506%. Increase in number of pump sets might be because of the replacement of diesel engines, animal drawn and

other indigenous systems with electric motors following power subsidization. But it is the jump in aggregate power consumption in agriculture that defies logic.

Quantum of power subsidy

According to the official white paper (p.24) while cost per unit of power at LT end was about 201.84 paise in 1997-98 the electricity board received only 16.12 paise from agriculture; and as a result of it, it incurred a loss of Rs. 1,733.88 crore. But if we take 5398 MU as the actual consumption in the agricultural sector per unit income from this sector will be 28 paise and loss incurred will be Rs. 938.40 crore.

At this stage we have to take into account the implications of cross subsidization. “ When utilities serve different categories of users, it is customary to have differential pricing. The fundamental basis for this approach is that , in the context of income inequality, the poor must be protected with lower prices, where as the rich , who can afford it, pay higher prices. The system is invariably designed so that the users paying higher prices cross subsidise the poor who pay lower prices and there by ensure the overall financial viability of the utility. It is, therefore, customary that differential pricing and cross subsidise go together in order to guarantee financial viability”. Industrial and commercial consumers are cross subsidizing agricultural and domestic consumption. While the average cost of power supply is Rs.2.29 per unit the industrial consumers are paying about Rs. 3.19 per unit and commercial consumers are paying Rs. 3.69 per unit. As a result of this additional income accruing to the board is about Rs. 907.8 crore (Rs.778.02 crore from industry and Rs.129.79 crore from commercial). This amounts to Rs.31.4 crore effective subsidy provided by the state government/APSEB. Even if we add subsidy of about Rs.163.25 crore provided to domestic consumers the total subsidy will not cross Rs. 200 crore. This show that subsidies to agriculture in particular are not the main cause of financial problems because the losses on this account are more than compensated by surplus from the industrial and commercial consumers.

If the state government still talks about losses running into crores of rupees they should be located elsewhere, primarily T&D losses including theft of power and not in agriculture sector.

This is only one aspect of this issue of losses incurring because of subsidies to agriculture sector. Water impounded in various irrigation projects cannot be taken to backward areas through canals. But the power produced under these projects can be used to exploit ground water. If the power produced by the hydro-power stations are meant for energizing irrigation pumpsets the whole talk of subsidy to agriculture sector appears irrelevant. During 1997-98, 7244.49 MU of energy is generated in the hydel sector. Even if the T&D losses account for 25 percent of the power generated the remaining power (5433 MU) roughly equals agricultural consumption. During the same year cost of power produced per unit in this sector is 19.44 paise while per unit tariff for agriculture amounted to 26 paise. At this juncture another aspect to be noted is that power to agriculture is supplied during non-peak hours. Besides this the supply is irregular and o fluctuating voltages. This itself implies lower tariff. Even the World Bank document acknowledges this, “It is unlikely that the short-term, under the current political situation the agricultural tariff can be increased significantly when the supply situation is far from satisfactory”. (p.11). This implies that in stead of obtaining positive subsidies the agriculture sector sector is incurring negative subsidies.

Wastage

Substantial amount of energy is being wasted because of inefficient use of irrigation pump sets. It is common to attribute this inefficiency to subsidized, low power tariff. It is alleged that as power is being supplied at very low rates farmers are not paying any attention to efficient use of the same. But, given the limited ground water availability and irregular power supply this charge of unbridled power consumption on farmers do not hold good. The fact that this inefficiency is because of improper choice of pump, piping and accessories like using non-frictionless foot-valves and GI delivery pipes instead of HDPE-piping, bad quality of pump and bad maintenance, using sets with higher than required developed head pumps and operating them at a very low efficiency is not well recognized. There are economically attractive possibilities of increasing this efficiency. Many field studies and pilot projects have demonstrated that 35 to 50 percent of the power supplied to agriculture can be saved.

In spite of the immense possibilities in saving energy no adequate steps are taken by the powers that be. The wastage is happening despite the APSEB conditions of supply for AS specifying the minimum efficiency of 30% the APSEB is empowered to correct the system at the cost of the farmer. The average efficiency in As in AP is less than 22%. Neither the Board punished the erring farmers nor taken steps to regulate use of efficient pump sets.

Rather the establishment and its guiding force, the World Bank in the present case, find the solution in increased tariffs. They contend that if tariff is raised the farmers themselves will go in search of efficient pump sets. In response to a call to look at the possibilities of increasing the efficiency of pump sets the World Bank contended, "Upgrading appliance efficiency is best fostered... (if tariff is increased). The Bank's immediate priority is to Address price distortions and institutional deficiency". (Prayas, p.25). Tragedy is that even if farmers go in search of efficient sets they will not be available in the market as they are not produced owing to lopsided standards.

Regional imbalance

The emerging power distribution policy is also going to affect agriculture, particularly in backward regions, adversely. Under the power sector reform programme the state is going to be divided in to different zones for the purpose of electricity distribution. Each of these distribution zones will be handed over to private companies on the basis of bidding. Private companies will prefer developed, industrialised, urban areas like Hyderabad and Visakhapatnam, as they hold prospects for higher profits. Backward, rural areas will be of least preference to them. As they hold least revenue prospects even no private company may come forward to take up distribution of power in the backward areas like Telangana and Rayalaseema. For the private companies that operate on profitability norms rural areas and poor people are not attractive. They limit their operation to industrial and urban centers only. As a result rural areas will be relegated to backwardness.

The experience of Orissa in this regard hold many lessons. For one of the distribution zones, CESCO, there was no taker. Then the American Electricity Supply Corporation (AES), which already has interests in power generation within Orissa, was invited to take up this zone. For this the AES imposed several conditions. One of it is to transfer 2% of the shares in the public owned Orissa Power Generation Corporation to it in which it already owns 49% shares. If this transfer takes place it results in transfer of overall control from government to private party. As a

result of this distribution policies backward areas will be neglected and well irrigated agriculture on which a large number of people depend in these areas will suffer.

Equity

Another issue that often crops up in the context of subsidized power supply is that of equity. Whether the fruits of this subsidy reaches to all section of the people equally. In the first instance this benefit will be available to the farmers who have pumps who may number about one fifth of the total farmers. Further the present flat tariff results in a highly inequitable distribution of subsidy. The relatively better off farmers, having access to abundant water and growing water intensive crops capture most of the subsidy. These farmers pay much less tariff (in Rs/kWh) and also pay much less in terms of share of their produce value, as compared to other farmers. It is contended that a shift to consumption based tariff is essential to remedy the situation (Girish Sant and Shantanu Dixit. 1996).

Conclusion

The present day reforms are based on 'shortage', 'crisis' psychosis. Power demand figures are first inflated and then to meet this inflated demand IPPs are invited through PPAs heavily favouring them. Then to follow this PPAs the cheaper base-load thermal plants have to be backed down, and the still cheaper peaking hydro electricity plants may have to be idled. This will lead to escalated power tariff as cheaper sources are idled and costly sources are used. These higher tariffs will have far reaching impact on disadvantaged sections of the society.

At present in AP 40 percent of the population did not benefit directly from electricity. If the present reforms are carried out this proportion will increase further. The power sector has been expanded in the name of the poor, but the pattern of its development bypasses the poor. Leaving utilities to take market without imposing on them the obligation to serve the community will deprive the poor of the privilege of electricity. A recent study on liberalization of domestic power in UK indicated that there had been cost increases for many poorer people who now have to pay cash in advance to obtain electricity and many of them had not been able to maintain their supply of electricity continuously. In contrast, rich electricity consumers often obtain discounts. (Waddams, 1996). In Orissa also per capita consumption of electricity declined after implementation of reforms (APSEBEA; p.29).

The above analysis shows that subsidies provided to agriculture is not the cause of present 'crisis' in power sector. Targeting subsidies in the name of economic efficiency will give rise to adverse consequences. The ubiquitous World Bank model need to be replaced with a system that addresses the concerns of common people and development needs of the state.

REFERENCES

- APSEB. 1996. Estimation of Agricultural Consumption.
- APSEB Engineers Association. 1999. Report of the Study Team on Power Sector reform in Orissa. Hyderabad.
- APTRANSCO. 1999. Power Development in Andhra Pradesh – 1998-99.
- APTRANSCO. 2000. Transmission Corporation of Andhra Pradesh: Factual Position.
- Dixit, Shantanu and Girish Sant. 1997. “How Reliable Are Agricultural Power Use Data?”, Economic and Political Weekly, April 12, 1997.
- Ghosh, Jayathi and Abhijit Sen and C.P.Chandrasekhar. 1997. “All Dressed Up and Nowhere to Go: India Infrastructure Report”, Economic and Political Weekly, Vol.32, No.16.
- Malhotra, Kamal 1998. “Public Good vs. Investor Interest in Private Infrastructure Development: Whose Interests Should Regulators Protect and How?”. Paper presented in the Seminar on “Private Interest vs. Public Good: Governance Dimensions of Regulatory Frameworks for Private Sector Infrastructure Development” organized by ADB and OECD in Geneva on April 28, 1998.
- People’s Tribunal. 1998. Farmers’ Suicides in Andhra Pradesh. Rythy Sahaya Committee, Hyderabad.
- Prayas. 1999. Regaining Rationality through Democratisation: A critical Review of MDBs Power Sector Activities in India. Prayas, Pune.
- Rao, M. Hariprasad. 1999. “Tariff Suggestions for Agriculture Sector”. (Mimeo).
- Reddy, Amulya K. N. and Gladys D Sumithra. 1997. “Karnataka’s Power Sector: Some Revelations”, Economic and Political Weekly, March 22, 1997.
- Sant, Girish and Shantanu Dixit. 1996. Beneficiaries of IPS Subsidy and Impact of Tariff Hike”, Economic and Political Weekly, December 21, 1996.
- Waddams, Catherine. 1996. “Winners and Losers from Liberalisation of the Domestic Energy Market”. Institute for Public Policy Research, London.
- World Bank.1997. Andhra Pradesh: Agenda for Economic Refoms. Report No.15901-IN, January 16, 1997.
- World Bank.1998. Andhra Pradesh Economic Restructuring Project: Project Appraisal Document. Report No.17710-IN, May 28, 1998.
- World Bank.1999. Andhra Pradesh Power Sector Restructuring Project: Project Appraisal Document. Report No.18849-IN. January 25, 1999.

