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FUNCTIONS AND ROLE OF INSTITUTIONAL
FINANCE FOR AGRICULTURAL AND
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By

B.M. Desai

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FUNCTIONS AND ROLE OF INSTITUTIONAL FINANCE
FOR AGRICULTURAL AND RURAL DEVELOPMENT

B.M. Desai*

I

This paper demonstrates that institutional finance must play a multi-functional role to fulfil its three-fold objectives of promoting (a) growth, (b) better equity, and (c) its own viability/profitability for agricultural and rural sector. It is further argued that sound and relevant institutional finance of this nature does not necessarily create major conflict in achieving these objectives. Both of these are elucidated in what follows by organizing the paper into three sections, namely, rationale for (section II), functions of (section III), and role of institutional finance (section IV). Final section briefly outlines policy support required for promoting multi-functional role.

II

Institutional finance services from the banking sector (cooperative banks, commercial banks, and Regional Rural Banks (RRBs)) are required for three basic reasons. One, these services are required to overcome limitations of the barter system. These are double coincidence of wants, inconveniences and near impossibilit

* Professor at the Centre for Management in Agriculture, Indian Institute of Management, Ahmedabad.

of exchange of indivisible commodities and innumerable exchange rates required for various commodities.¹ Two, these services are also required to effectively compete with the informal lenders like money lenders, landlords, traders etc. who inhibit transfer of funds, process of monetization and the consequent division of labour and specialization. In some backward areas they perhaps exploit their borrowers by operating in land, labour, and commodity markets.² Three, notwithstanding the importance of these two, more significantly institutional finance services are required because borrowing and saving by any person imply an opportunity for the institutional financing agencies to undertake credit disbursement and deposits mobilization and/or equity capital³ collection functions. This person be, he/she, a bonded labourer or an elite farmer or an industrialist borrows and/or saves because of lack of simultaneity between the realization of his/her income and the act of expenditure. The fact that the lack of simultaneity occurs is normal and virtually universal. Some of the reasons why flows of receipts and flows of payments have differing time patterns are : (a) time periods required for production may not coincide with the time periods applicable to producers' consumption and other needs. Most methods of production have long gestation period between the start of

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1. It may not be unreasonable to assume that barter system may be prevailing not only in tribal areas, but also in remote areas of Eastern India and drought prone areas.
 2. For some evidence on such operations see, for example, Raj 1975, Bhaduri 1971, Desai 1976, and Bardhan 1980.
 3. This function is relevant for cooperatives only since major commercial banks are already nationalized.

production and the sale of the produce. These periods must be financed so that shorter consuming cycles may continue.

Savings and/or borrowings are the sources from which these periods are financed. For a field-crop farmer harvests occur once or twice a year; while consumption occurs continuously. For a dairy-farmer, the interval between the realization of income and act of expenditure is shorter for his income is more or less continuous provided he has two milch animals and has access to marketing facilities; (b) some commodities are indivisible in the sense that they cannot be purchased in bits and pieces and hence are costly in relation to income earned over a short period, though expenditure on them must be incurred right at the time of purchase. Purchases of such items require past accumulations or payment out of expected future income which can be the basis for borrowing.⁴ Examples include wells, pumpsets, farm implements, tractors, bullocks, cows, buffaloes etc.⁵ and (c) periodic settlement of payment is convenient. Payment for a continuous service on a continuous basis is frequently inconvenient for both buyers and sellers. For example daily wage earners like labourers working from morning till evening on public works programme or on farmers' fields are paid at the end of the day's/week's/season's work. When such workers are paid in advance they are being accommodated as consumers who in turn convert energy into some economic activities.

4 This is an accepted principle of lending by the banking sector not only for term-loans but also for crop-loans which also generate production and income at the end of a crop-cycle.

5 Some of these are even required to carry out meaningful and productive soil and moisture conservation measures by the farmers.

Similarly, electricity bills of a farmer or for that matter anyone are settled only once a month.⁶

From the preceding it may be concluded that there are periods of deficits and surpluses for most people. Differences in this regard among farmers, labourers, cottage industrialists, other industrialists etc. are differences of degree rather than kind. The degree of difference is more unfavourable for the farmers and other low income people. Secondly, the need for indivisible commodities to modernize is also fairly universal. Both these imply need to accumulate (financial saving) and/or borrow. The periods of surpluses imply a potentiality to accumulate (financial) savings and a source to repay loans. Periods of deficit on the other hand imply need to draw from past savings and/or borrow. Modern financial institutions can, therefore, identify opportunities to lend, recover loans and mobilize deposits even in backward areas. Such opportunities can help reduce their dependence on refinanced and/or temporarily accommodated sources of loanable funds from the Reserve Bank of India/NABARD. They can also facilitate improving allocative efficiency and equity in transferring funds from surplus to deficit regions, sectors, economic activities and also the entrepreneurs.

⁶ Some of the Primary Agricultural Cooperative Societies (PACS) make such payments on behalf of their farmer-borrowers who are sanctioned crop-loans.

III

While the above mentioned three basic functions of lending recovering loans and deposits mobilization⁷ by the banking sector are conventionally accepted, the goal of developmental banking also requires providing technical and other assistance to the rural people to improve the skills they already possess and to acquire altogether new skills particularly by the new generation to promote growth of the commodity sector in the rural economy.

For all these four functions of institutional financing agencies there is a need to evolve simple instruments of intermediation. This is because of widespread illiteracy and moderate, if at all, knowledge about modernized banking among rural people. Secondly, this intermediation process should be for activities which are consistent with these people's resource endowments including skills they already possess. Most of these activities, be it on-farm or/and off-farm revolve around agriculture and allied agriculture commodities. Thirdly, intermediation between the institutional financing agencies and the rural people should be characterized by proper features related to maturity period, minimum denomination, security required for disbursing credit, interest rate and other charges etc.

⁷ In the case of cooperative unlike commercial banks the function of equity capital collection is also a very important function. Such collection from the members is extremely critical for it influences their participation, maximum borrowing capacity to mobilize deposits and loanable funds from the central financing agencies and above all the extent and pattern of operations that these banks and their grassroot level organization like PACS can undertake.

Differences in this regard determine the level of access which different rural people would have to participate in modernizing financial intermediation process. For example, when eligibility for loan is determined by the ownership of a collateral, it has the effect of excluding tenant-farmers. Similarly, saving deposit with minimum balance requirements that are large in relation to the daily income of agricultural labourers has the effect of excluding such people from becoming saving account holders. Third example could be that of a recurring deposit scheme which requires saver to deposit cash every month has the effect of excluding farmers with field-crops that mature at the end of three or four or more months. Yet another example is that of a deposit scheme which allows a loan facility for an amount smaller than the deposit at an interest rate higher than the interest rate on deposit has the effect of withdrawing deposit or borrowing only that amount and/or for a period which would cost less than or equal to the return on deposit. Such deposit scheme moreover is almost irrelevant for farmers who may prefer to build margin money by depositing small amounts over a period with an assurance that they could finance remaining cost of a productive asset by borrowing from the banks.⁸ Fifth example could be that of interest rate on credit which is higher than the rate of return on capital invested in agriculture has the effect of excluding especially

⁸ For some discussion on such schemes and for some successful experiments of one of the leading commercial banks, see Thingalaya 1978, Bhatt 1970, Rangarajan 1978, and Bandopadhyay etc. 1985.

smaller entrepreneurs from the nexus of modern financial services. Sixthly margin requirements which work out fairly large in amount for a term loan has the effect of discouraging smaller farmers to borrow from the financial institutions. Seventh example is that of technical advice provided only at the beginning of the loaning period has the effect of not considering subsequent changes in the production process and thereby eliminating utilization of full potential of new technologies. Finally, when some financial institutions especially cooperatives attempt to undertake marketing operations without having any access to marketing credit and/or godown facilities it has the effect of pre-mature discontinuation of such operations which are extremely useful from the viewpoint of their borrowers. Thus, to sum up, modern financial institutions are required to undertake six basic functions. These are: increasing the extent of monetization, credit disbursement, loan recoveries, deposits/equity capital collection, providing technical advice and organizing marketing services for both modern inputs and produce for the rural sector.

While commercial banks are eminently suitable for undertaking first five of these six functions, the cooperative banks are suitable for undertaking all the six functions particularly because their grass-root level organization, namely, PACS has the potential to undertake marketing function, too. Even for

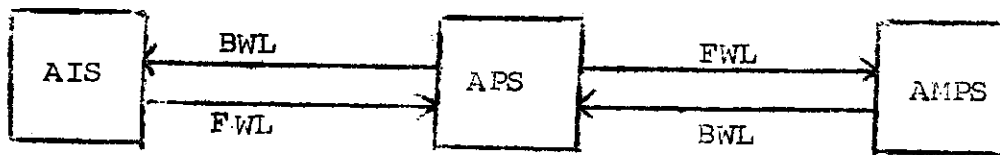
the commercial banks it would be possible to undertake the sixth function in an indirect manner by promoting credit and deposit portfolios not only for the farmers but also for the input dealers and for the agricultural produce marketing agencies.⁹ Indeed, institutional credit portfolio for the agricultural inputs distribution alone has already grown more than seven-fold from Rs.835 million outstanding in 1969-70 to Rs.6159 million in 1980-81 when it accounted for 38 per cent of "indirect" agricultural credit and about 6 per cent of total rural credit. This brings us to discuss these two types of credit and policies related to them. Before this is done a brief discussion of the multi-functional role of financial institutions serving the rural sector may be presented with a view to highlight its implications to agricultural growth and equity, besides the viability of these institutions.

IV

Multi-functional role of the type described above emphasizes deployment as well as redeployment of funds by the banking sector in the rural economy to meet its growing financial requirements for modernization. Financial institutions which aim at this goal would undertake multi-term and multi-functional lending as well as funds mobilization operations. In the context of agriculture and rural development their multi-functional lending operations can include credit given not only for farm production, but also for agricultural inputs marketing and agricultural produce marketing and processing. Institutional

⁹ Such institutional agencies in India now include Food Corporation of India, Commodity-based Cooperatives/Corporations like Oil-seeds Growers' Federations, Cotton Corporation of India, Jute Corporation of India, State Trading Corporation, General-purpose Apex Coop. Federations and their affiliates at the lower levels. The last one is extensively involved in inputs marketing. PACS alone account for more than 50 per cent share just in fertilizers. Many of them are severely constrained by non-availability of fund and non-fund based marketing credit for this business.

credit for farm production assists in generating demand for market-purchased inputs and services and thereby influences backward linkage (BWL) of agricultural production sub-system (APS) with the agricultural inputs sub-system (AIS). Achieving such linkage is accelerated through credit to AIS since it would encourage this sub-system to stock and supply inputs and thereby enable attaining its forward linkage (FWL) with the APS. Institutional credit for APS furthermore assists in encouraging supply of agricultural produce and thereby creates demand for services from the agricultural marketing and processing sub-system (AMPS). This process can help achieve FWL of APS with the AMPS. Attainment of such linkage is accelerated through credit for AMPS as it would promote supply of its services and thus achieve its BWL with the APS. These linkages are graphically shown below :



These types of linkages are critical for increasing agricultural productivity, production, and value added not only for larger but more importantly for smaller farmers. In other words, they would improve not only overall rate of agricultural growth, but also its distribution, since many smaller farmers do not have timely and adequate access to modern inputs and assets, and produce marketing services.

Moreover, institutional credit to various types of clients in the three sub-system could be for acquiring productive assets (i.e. fixed capital term-loan) as well as for operating capital¹⁰ (i.e. working capital short-term loan). In this sense also this credit is multi-functional, besides being multi-term. Modern financial institutions could mobilize funds for equity capital or for term lending or for short-term lending or for all of these. Their multi-functional operations can further include making available extension or technology transfer, price and market information services. Both these funds mobilization and non-financial functions would be beneficial especially to the smaller farmers and other weaker sections since they could be integrated with the provision for deployment and redeployment of funds through credit-linked deposit schemes referred to earlier. It is doubtful whether PACS with their meagre personnel and elementary knowledge about modern banking can promote such schemes. They can, however, undertake such credit-linked equity capital collection operations much more vigourously than what they presently do. Such operations would be highly conducive to promote thriving commodity producing and marketing sectors and entrepreneurs.

10 Such credit need not always be fund-based. Non-fund based credit like bank guarantee, inland letter of credit etc. could also be promoted. This credit for AIS may especially be promoted so that the entrepreneurs engaged in this sub-system can obtain inputs supplies directly from the wholesellers and/or manufacturers and thereby improve their margins.

Multi-functional role of the type described in the above has a potential to improve viability and profitability of financial institutions serving agricultural and rural sector. This would arise basically from three different sources, namely, scale economies emerging from the larger volume of operations,¹¹ scale economies induced by multi-functional character of this portfolio with "high" and "low" interest rates both on loans and deposits and/or equity capital, and three higher loan recoveries and hence higher recycling of funds. While first two of these three need no elaboration, the third may be discussed in some detail.

Loan recoveries of institutional finance seem¹² to be a major problem for the loans to APS and hence this discussion would be restricted to these loans only. Some of the reasons for loan overdues with the APS are (a) natural factors like drought and floods, (b) inadequate increases in production and marketable

¹¹ Unit cost and margin estimates based on loan operations alone give misleading picture about these scale economies and the profitability of financial institutions. Such picture is further compounded when these are estimated for "direct" agricultural loans alone. This would be the case even for Co-operative Land Development Banks as well as PACS which are alleged to be merely credit disbursing institutions. Both of these do recover loans and collect equity capital. Moreover, PACS undertake very useful functions of inputs marketing, consumer goods marketing and sometimes produce marketing and deposits mobilization. For some evidence on scale economies and unit costs of operations of PACS at an all India level as well as at an individual organization level, see Desai 1983, and Desai et al 1987. For difficulties in estimating costs of operations of banks for any single activity in isolation, see Khusro et al 1972, Rangarajan et al 1972, and Thingalaya 1978.

¹² This is because no such data on AIS, AMPS, and other industry loans extended by the banks are published as yet.

surplus on account of lack of access to modern technology and marketing facilities, (c) mismatch between the time at which farmers can repay the loans and the time schedule fixed for loan recovery, (d) faulty policy of recovering term-loan from gross instead of net returns which truly constitute the source of funds to repay such loans, (e) inadequate financing resulting from the age-old formula to determine the scale of finance and inadequate basis to calculate the unit cost of investment, (f) non-availability of complementary credit like working capital credit for efficiently utilizing investment credit, and (g) concessionary interest rates. All of these factors imply weak BWL and FWL between various sub-systems and inappropriate loan appraisal and monitoring. While the former results into lower factor productivity and incomes for the APS, the latter results into similar characteristics for the banking sector. Multi-functional role of the type through all the six functions discussed earlier would strengthen these linkages and thereby improve factor productivity and incomes for the APS as well as for this sector.¹³ Building sustained incremental income and loan repayment capacity through institutional finance to transfer new agricultural technologies to the rural borrowers is an avowed criterion of such lending. And this capacity cannot be built without the BWL and FWL¹⁴ which can themselves be promoted

13 It would be inappropriate to assume that the banking sector cannot overcome its weaknesses in loan appraisal and monitoring. Mistakes which have occurred in the past are to some extent an outcome of undertaking an altogether new activity of rural lending. They form the basis for new learning and where there is a will there is a way out.

14 Bankers have argued that their loans for poverty alleviation programmes and other agricultural purposes have not done well due to weak such linkages for more than a decade now (Raj Krishna 1979). It may be time now to think of "How" to improve these linkages.

through meaningful financial intermediation between the banks and the AIS and AMPS for their commercial and semi-commercial activities. Question arises as to how such intermediation may be encouraged. To this along with the policy support needed from the RBI and NABARD we now turn.

V

It would be wrong to say that financial institutions serving rural sector are not multi-functional in nature. It is well known that such institutions are multi-product firms and industries. For example, commercial banks collect deposits, provide credit, grant non-fund based credit, sanction overdraft facilities, extend technical services etc. Similar is being done by the cooperative banks and perhaps RRBs. What then is new in what we have argued earlier ? Basically it is different in three respects. These are : (a) for whom, (b) what, and (c) how these functions are undertaken ? These functions in the approach outlined above are visualized for private and/or institutional entrepreneurs in AIS and APS and only for institutional agencies in AMPS.¹⁵ This is because these enterprises presently constitute the scope of "direct" and "indirect" rural

15 Even the institutional agencies in AMPS, and large private and public sector agricultural inputs industries in AIS which are permitted to take deposits from the public and their shareholders may be given lower priority. Moreover, new institutional and private enterprises like commodity-based cooperatives and the like which are already provided with core working capital and fixed capital for their operations from the developmental budgets of the government may be given the lowest priority.

credit from the banking sector.¹⁶ In the case of AIS the latter type of credit is extended only for the 'marketing' function. In the case of AMPS it is extended for both 'production' and 'marketing' functions, while the "direct" credit to APS is mainly provided for the 'production' function only.

Some uniformity in the coverage of these functions for the two types of agricultural credit is called for. In the case of AIS credit both 'production' and 'marketing' functions be covered for some agricultural inputs. For example, those fertilizer industries which are not able to produce fertilizers at competitive rates on account of outdated technologies may be permitted to take "indirect" credit for both these functions, and particularly for modernization of their technology. Similarly, seeds companies may be allowed banking credit for both these purposes, though financing of farmers who produce seeds may be continued under "direct" credit for their 'production' function only. Third example could be that of agricultural implements and

16 A study of institutional credit for ten different green revolution and dry-farming areas showed that the degree of agricultural progress is positively associated with the share of (a) AIS credit in "indirect" credit, (b) "direct" credit for stability and growth of current production, and (c) "kind" crop-loans in ST "direct" credit. It moreover showed that the degree of agricultural progress is negatively associated with the share of AMPS credit in "indirect" credit. Thirdly it showed that the default rate of credit to APS is also negatively associated with the shares of above mentioned three types of rural credit. from the cooperatives. Punjab where the shares of these three types of cooperative credit were the highest and sustained, this default rate never exceeded 26 per cent. And this state is well known for its green revolution and lowest incidence of absolute poverty. (For details see Desai et al 1987).

'machineries (AIM) industry which produce hand-drawn, animal-drawn, and to some extent power-operated smaller but scientific implements may be allowed banking credit for both 'production' and 'marketing' functions. This kind of AIM industry is perhaps one of the most neglected industries in India. This industry is small, family-type workshops or medium-scale units. Commercial-based such industry mainly exist for only three types of implements and machineries, namely, mechanical lift devices for irrigation, tractors and related implements, and plant protection appliances. Moreover, whatever AIM industry exists is geographically unevenly spread, besides being inadequate in respect of its product range covering the type of implements for which modern designs are already available. Annexure-1 gives some data on this.¹⁷

Existing successful fertilizer and tractor industries may be encouraged to diversify into these kind of products by extending "indirect" agricultural credit.¹⁸ In the case of APS credit both

17 Even Khadi and Village Industries Commission's efforts to develop village industries relevant in the above context is highly inadequate. In 1983-84, its assistance in terms of grants and loans (IDBI, funded) amounted to barely Rs.46 million, which accounted for only 10 per cent share in total assistance to cottage industries (IDBI 1984). The existing AIM units face bottleneck in obtaining required iron, steel, other raw material spareparts and above all institutional finance, besides obtaining designs and technical training in fabricating smaller but scientific implements. Indeed, neither NABARD nor IDBI nor other industrial financing institutions nor other financial institutions have as yet formulated any project for financing manufacturing and marketing of smaller but scientific farm implements. For immense scope for and problems and challenges involved for developing the AIM industry, see Sharan Girja 1987.

18 NABARD and rural credit division in institutions like IDBI may even consider participating in equity capital for such new projects. Yet another alternative is to promote Artisan-based Family type Workshops and/or Factory-based Manufacturing by private proprietorship/partnership firms. Both these types of organizational models for AIM industry of the type visualized earlier could be promoted as a part of priority sector lending by the commercial banks. The former could be even made a part of IRDP, though they may not be able to overcome the kind of constraints faced by the AIM industry discussed earlier. Nonetheless, they may be able to perform repair and service operation for products purchased from this industry. Moreover, both "indirect" agricultural credit and IRDP loans are 'priority' sector lending (RBI 1984).

'production' and 'marketing' functions may be covered especially for smaller and medium sized farmers who often do not get remunerative prices for their products. RBI and NABARD can play a catalytic role by identifying these opportunities and guiding the financial institutions in capitalizing on the innovative policy of "indirect" agricultural credit introduced in the late 1960s.

Secondly, at present both "direct" and "indirect" agricultural credit functions seem to be viewed merely as credit disbursing functions which have to be always and fully refinanced and/or temporarily accommodated by the RBI/NABARD. What is argued in the preceding section is that the financial institutions extending these two types of agricultural credit undertake all the six functions and for which they use not only the refinance but also their own resources. In order that they can generate their own resources not only the required credit-deposit ratios for rural and semi-urban branches at the Corporate level are attained, but they are also attained at much disaggregated levels. Furthermore, they may introduce credit-linked deposits as outlined earlier for the clients which are relevant and prioritized in the preceding discussion for the three sub-systems. They may also collect margin money in smaller amounts of deposits with an assurance that credit for productive purposes¹⁹ which

19 In the case of "direct" credit for APS this may also include providing credit for simple soil turning and ploughing operations which farmers periodically undertake even in a drought year. Thus, financial institutions instead of waiting for rains to come and then resume their "direct" credit operations for the avowed purposes can provide credit of this

involve production and marketing of real commodities could be extended. Thirdly, such credit could be either fund or non-fund based or both. Fourthly, the criterion of incremental income and repayment capacity which is being increasingly applied to APS may also be applied to AIS and AMPS entrepreneurs of the kind identified. Many a time the criterion of collateral security have discouraged smaller entrepreneurs in AIS to take full advantage of banking services. Similarly, they have been discouraged due to very stringent custody facilities demanded for their stocks by the banks. Fifth, of late, they have the disincentives arising from very high interest rates²⁰ on the bank loans.

Sixth, yet another problem is that the financial institutions do not have adequate funds to provide working capital credit for "direct" as well as "indirect" credit at a particular time in a given year. This is because the time at which demand for this credit arises does not match well with the time at which these institutions can mobilize deposits. Under such circumstances RBI/NABARD may consider providing temporary credit accommodation and/or refinance on a continuing basis. Such a policy would not necessarily be inflationary as the activities financed under the above mentioned "indirect" agricultural credit

²⁰ For some evidence on all of these, see Desai et al 1987, GOG 1983, Sikdar 1977, and FCI 1968. Interest rates on "indirect" credit for AIS and AMPS at present range from 14 to 18 per cent. There also exists a provision to extend such credit at 11.5 per cent but only for a limit of Rs.5000 ! Such limit is too small to carry out any meaningful commercial activity by even a small dealer in inputs.

have a potential to induce more agricultural output. This is also because such a policy would help converge input supply forces with the forces of demand for inputs arising from the refinance extended by the NABARD/RBI for "direct" rural credit. Moreover, trading business for inputs is very different from such business for final consumer goods or agricultural commodities. Thus, to sum up, financial institutions including RBI and NABARD require to take priority action on (1) altering the scope of "indirect" and "direct" rural credit, (2) promoting more flexible refinance and/or temporary credit accommodation for AIS and APS credit, (3) relaxing operational policies like interest rates, collateral and security, margin etc. required on these two types of credit, (4) developing credit-linked deposits and/or equity capital collection from AIS and APS, and (5) evolving comprehensive service system for these two sub-systems of an agricultural system.

Annexure - 1

Illustrative List of Improved Implements and Machinery whose Fabricating Designs are Available

<u>Animal-drawn and/or Manually-operated</u>	<u>Designed by</u>
1. Iron Plough	X : Punjab Agricultural
2. Disc Harrow	X University (PAU),
3. Seed Drill	X Ludhiana,
	X IIT, Kharagpur.
4. Ganga Seed-cum-Fertilizer Drill	X
5. Jamuna Seed-cum-Fertilizer Drill	X IARI, New Delhi
6. Kissan Seed-cum-Fertilizer Drill	X
7. Seed-cum-Fertilizer Drill	X GSFC, Baroda, IFPCO
8. Improved Weeding Tools	X
9. Threshers	X PAU, Ludhiana
10. Sprayers and Dusters	X
11. Pedal Thresher	X IIT, Kharagpur
12. Hand Operated Seed-cum-Fertilizer Drill	X Central Institute of Agricultural Engineering (CIAE), Bhopal
13. Improved Gardening Tools including Hand Pumps for Irrigation	X " Agricultural Implements Improvement Unit, Suruchi Campus, Bardoli
14. Improved Weeding and Harvesting Tools	X PAU, Ludhiana

Power Operated Implements and Machines

- | | |
|---|--|
| 1. Threshers | PAU, Ludhiana, IIT
Kharagpur, and many
other Private Manu-
facturers of Farm
Implements and
Machineries |
| 2. An Integral Tool-Bar. A Multiple
Farm Operation Implement for
Seed bed Preparation and Sowing
and Fertilizer Operations | IARI, New Delhi, and
many other Private
Manufacturers |
| 3. Paddy Transplanter | IIT, Kharagpur
CIAE, Bhopal and some
Private Manufacturers,
IRRI |
| 4. Wheat Hoes | IIT, Kharagpur |
| 5. Mould Board Plough | " CIAI, Bhopal |
| 6. Care Junior Plough | " |
| 7. Wet Land Rudder | " |
| 8. Wet Land Leveller | " |
| 9. Bund Former | " |
| 10. Weeder-cum- lecher | " |
| 11. Paddy Weeder | " |
| 12. Six Row Pregenerated Paddy
Seeder | " |
| 13. Multi Row Jute Seed Drill | " |
| 14. Two Row Seed Drill | " |
| 15. Blade Harrow | CIAE, Bhopal |
| 16. Two-Three Row Seed-cum-Fertilizer
Drill | " |

17. Multi-tool Bar	CIIE, Bhopal
18. Weeders	"
19. Tubular Maize Sheller	"
20. Transplanter	"
21. Diesel Engines	Y
22. Electric Motors	Y
23. Pumpsets	Y
24. Power Tillers	Y
25. Tractors	Y
	Many Private Manufacturers

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