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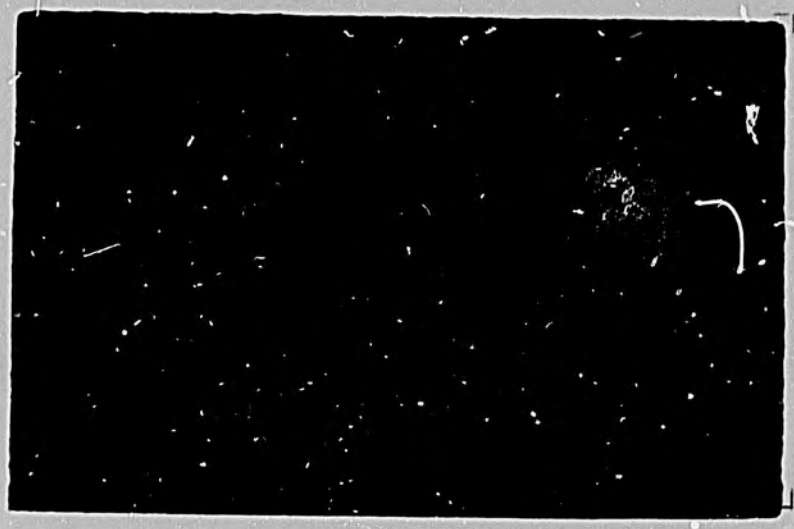

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Discussion Paper No. 4

GOVERNMENT OF TURKEY'S POLICIES RELATIVE TO ON-FARM LAND DEVELOPMENT

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GOVERNMENT OF TURKEY'S POLICIES
RELATIVE TO ON-FARM LAND DEVELOPMENT 1/ *

The pace of primary water development in Turkey has far exceeded the pace of secondary and tertiary system construction and on-farm land development needed to capture the full potential of the planned irrigation. The slow pace of land leveling is a particularly crucial bottleneck. Since leveling often increases yields 30-100 percent, accelerating the pace of leveling could bring dramatic increases in agricultural production. There are several key restraints holding back the expansion of leveling and other on-farm land development activity. Since the restraints are different inside the State investment projects from those outside each will be treated separately. For ease of exposition, we deal first with the situation outside State Project areas.

I. On-Farm Land Development - Outside State Investment Pojects

There is a growing awareness among farmers that an investment in on-farm land development can bring phenomenal rates of return (in some cases 200 to 300 percent in the first year). Therefore demand for services is growing

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1/ On-farm land development as used in this paper includes leveling, drainage and similar works falling under the authority of Topraksu(Soil and Water Directorate). Leveling is by far the most important element.

* The author would like to acknowledge the valuable contributions to this analysis made by Warren Leatham, USAID/Turkey, Water Resources Advisor. The analysis was made possible through the superb cooperation and assistance given by both Topraksu (Soil and Water Directorate) and Devlet Su Işleri (State Hydraulic Works).

rapidly. Because of the high returns to their investment farmers can pay contractors attractive rates for land development and in some regions, there has been a rapid expansion in private contracting services. In such areas where the needed "demonstration effect" has been achieved, the main problems are:

1. Shortage of credit to farmers, contractors and equipment manufacturers.
2. Insufficient engineering capacity to lay-out projects.

There is evidence that provision of credit to farmers will increase sharply the effective demand for land development. With credit many who formerly had the desire to develop their land but no money would now have both. A substantial rise in demand could swamp Topraksu's present engineering capacity. As demand grows, perhaps contractors should be able to do their own engineering, subject to verification and control of standards by Topraksu. Waiting for engineering costs money. In talking with farmers we got the impression that rather than wait for free engineering services, they would gladly pay for faster service if available.

3. Subsidized leasing of Topraksu equipment to contractors and farmers.

A Topraksu D-6 tractor with operator and fuel costs the farmer about 150 TL/hour. (There is no charge for depreciation, interest or customs taxes). We are told that a private contractor must charge private farmers about 300 TL/hour for a D-6 to cover full costs and reasonable profit. If contractors work twice as fast (as some do) they can compete, but if an equally efficient competitor rented Topraksu equipment, the contractor owning his own would quickly go out of the business. Moreover, building up contracting services on the basis of rented equipment limits activity to

the size of Topraksu's budget (more on this later). The objective should be to have contractors owning their own equipment, paying for it on the basis of reasonable charges to the farmer. At the moment Topraksu does not have a large enough rental pool to make subsidized competition a real problem, but expanding the supply of subsidized Topraksu equipment would strongly discourage the private contractors from purchasing their own equipment.

II. State Investment Projects

The State has a large investment in irrigation works which is underproducing due to the lack of land development. Private farm land is developed in these areas by Topraksu essentially free of charge. This policy has a number of side effects:

1. Virtually no one will contract for private on-farm development as long as he thinks that eventually he will get it free.

2. The amount of on-farm development that can be done is a function of the size of Topraksu's budget. (Note: it is not a function of the amount of machinery Topraksu has since contracts can be let to private machinery owners to the extent that budget resources exceed Topraksu machinery capacity.)

3. The large amount of private on-farm development outside project areas in some regions suggests that farmers inside the project areas are obtaining free what they would otherwise be prepared to pay for. If it were not for the fact that Topraksu development is free (and hence worth waiting for) many farmers inside the project area probably would go ahead right away with leveling and other such work.

4. Being dependent on the Topraksu budget, virtually free development provides no way for channeling a portion of the dramatic productivity gains of on-farm development into expanding the supply of development services. Even the proposed investment recovery through water charges could not expand the supply of services since receipts go to general budget revenues. In contrast, outside the project areas, part of the profits of the farmers become the profits of the contractors. These profits are generating a large expansion in leveling capacity. Inside the project areas only the Topraksu budget provides funds to expand land development capacity.

5. Unless the farmers inside the project area are relatively poorer than those outside, subsidized development within the projects and full cost development outside is hard to justify on equity grounds.

6. There is some evidence that private contractors are able to achieve considerably higher rates of equipment utilization than Topraksu. 1/ Thus, a given amount of equipment could level many more decares if in private rather than public hands. However, since Topraksu contract work is relatively less profitable than other work it would be difficult to contract out large amounts of development work as long as other work is available.

Steps possible to accelerate on-farm land development

In viewing the problems observed both inside and outside State investment projects there appear to be a number of steps possible to speed the

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1/ The reasons include Topraksu work rules, contractor operator incentives rewarding speed, the contractor's need to recoup the cost of the machinery.

pace of land development.

A. State Project Areas

1. Given present and expected future pressures on the general budget the most urgent matter is to devise some means of channeling a portion of the benefits of leveling directly back into expanding leveling capacity. If water charges are the chosen vehicle, they should be increased substantially to farmers whose land is developed to recapture investment costs in a relatively short period. Farmers paying for their own development should be exempt from this incremental charge for water. Funds collected should be earmarked for expanding land development capacity.

An alternative would be to charge the farmer some fraction of the production increase realized from development until the investment is recovered--say 10-15 percent. Thus, he has no risk - no increase, no charge. Since he keeps the major share of the increase, he retains a strong incentive to increase production. Since project field staff keep good records of yield in the project areas, determining the increase after leveling should be relatively simple.

2. Make project work more desirable for contractors. At the same price per cubic meter, DSI work is generally preferable to Topraksu work due to the high precision required in leveling. Road contracts apparently pay over twice as much per cubic meter as DSI or Topraksu. Further, since off-season idle-time is a problem for land development contractors, the possibility of package Yol-Su-Elektrik (Road-Water-Electricity) Topraksu contracts might be considered spanning a full ten or so months of the year.

3. Because of the way the accounting for equipment is set up, presently, Topraksu views only current operating expenses as costs. Depreciation, interest and customs duties are not included, thus true costs to the economy are not reflected in the rental charge. When rental charges are subsidized, contractors have little incentive to purchase their own equipment, and thus the supply of equipment remains limited by Topraksu's budget. Indeed in many respects, having contractors dependent upon Topraksu for equipment respresents the worst of both worlds. The contractor has no strong interest in maintenance, equipment may not be free or in good repair when the contractor tries to get it from Topraksu and rental fees accrue to general budget revenues and do not expand the supply of services. Topraksu charges for rental equipment should be based upon full costs including interest, depreciation and customs to encourage contractor equipment ownership.

B. Outside Project Areas

1. Expand the supply of credit to farmers, contractors and equipment manufacturers.

2. Insure that import quotas for contractor equipment are available.

3. Charge full equipment costs when renting equipment to farmers and contractors. (A-3 above)

4. Consider incentives to encourage contractors to develop engineering services. However, in any event Topraksu should certify engineering personnel and/or the contractor engineering work itself.

C. A Key Consideration - The Size of Topraksu's Budget

As noted, the existing approach to on-farm land development makes the pace of development largely a function of the size of the Topraksu budget.

In 1968, their budget was 16 percent of the total agricultural sector's investment budget. By 1971, this had grown to 21 percent of roughly the same size agricultural sector budget. Even with this relative increase Topraksu has capacity to level annually 25,000 hectares. This they hope to expand to 65,000. This expansion implies a budget for Topraksu about 50 percent higher than the one for 1972. Moreover, it implies expanding Topraksu's share of the total agricultural sector investment budget to about 34 percent, conservatively estimated. 1/

Every year about 100,000 new hectares are opened to irrigation. Therefore even with an annual capacity of 65,000 hectares the present backlog of over 400,000 hectares would continue to grow annually by about 35,000 hectares per year. The fact that the backlog would continue to grow even after a 160 percent increase in Topraksu's capacity argues strongly against any strategy which restricts the pace of development to Topraksu's budget and/or equipment capacity.

Even if it is possible to increase Topraksu's budget by 50 percent, one might question the use of scarce investment funds to do something many would pay for if it were not given free. This issue aside, to tie the pace of land development to expansions in Topraksu's budget could slow rather than to accelerate the pace of development since it says farmers to wait for Topraksu's essentially free development. What is urgently needed is a way to use part of the productivity gains to expand the supply of leveling services. This analysis has attempted to suggest several possibilities for achieving this goal.

1/ Adding 40,000 hectares of capacity is estimated to require the addition of at least TL 220 million to Topraksu's budget.