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CROP PATTERN, PRODUCTION TARGETS AND STRATEGIC INTERVENTION

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The purpose of this paper is to bring out the need for adopting, besides the production targets now in operation, acreage targets for different agricultural commodities, with a view to promoting the evolution of a rational crop pattern. Further, the note seeks to show, albeit in an admittedly limited sphere, how any deviation from the rational crop pattern could be corrected by what has been called strategic intervention.

For the purpose of the present discussion, a rational crop pattern may be simply defined as the one which would ensure the attainment of production targets set out in the Plans. This can be said so because, in laying out the targets of production of different agricultural commodities, the requirements of foodgrains for consumption, of raw materials for industries, of export commodities and also the possibilities of ensuring self-sufficiency in certain agricultural commodities that are at present being imported—all these are presumably taken into account. Total production of any agricultural commodity is a product of yield per acre and the total acreage under it. Although the former factor has proved to be rather elusive because of the continued dependence of agriculture on monsoons, the latter is more amenable to control and hence to planning. It is only in this sense that the definition of a rational crop pattern, given above, has to be interpreted. The point is that ideally a rational crop pattern should ensure the attainment of production targets set out in the Plans. To the extent that yields do not lend themselves for precise control, however, the minimum that a rational crop pattern should guarantee is that the allocation of land between different crops is dictated by the priorities implicit in the production targets.

RATIONALE OF THE PRESENT CROP PATTERN

It is against this background that the rationale of the present crop pattern has to be judged. The Second Plan targets may serve as a useful starting point for analysis. In Table I are set out the data regarding the targets and attainments of production of certain selected agricultural commodities. It can be seen from these data that the only commodity which has the distinction of substantially exceeding the production target is sugarcane. All other important commodities have fallen short of the production targets with perhaps the sole exception of rice which also showed a small excess over the target.

The production of sugarcane (in terms of *gur*) was 10.4 million tons as against the targeted 7.8 million tons; thus in fact the target set for the end of the Third Plan was ostensibly reached at the very commencement of the Plan itself. This led to a record production of sugar of 30 lakh tons in 1960-61. Unfortunately, this

*The views expressed in this paper are the personal views of the author and not those of the institution in which he works. My thanks are due to Shri P. P. Leelakrishnan who provided most of the data on sugarcane and to Shri G. S. Oka for assisting me in the collection of other data.

TABLE I—SECOND PLAN TARGETS AND ACHIEVEMENTS

Commodities	Second Plan Target	Actual Production in 1960-61	Percentage Variation of (3) over (2)
1	2	3	4
Foodgrains (million tons)	80.5	79.7	- 1.0
Rice (")	32.0	33.6	+ 5.0
Wheat (")	11.5	10.8	- 6.1
Sugarcane (<i>Gur</i>) (")	7.8	10.4	+33.3
Oilseeds (")	7.6	6.5	-14.5
Cotton (million bales of 392 lbs. each)	6.5†	5.4	-16.9
Jute (million bales of 400 lbs. each)	5.5	4.8	-12.7

† Revised downwards to 5.4 million bales towards the end of the Plan.

substantial surplus of sugar which could not be sold either internally or on the international markets, has become, as the Tariff Commission¹ euphemistically puts it, "a source of national embarrassment." On the other hand, in respect of another important commodity like cotton, production fell short of the target by nearly 17 per cent. The level of production declined further to 45 lakh bales in 1961-62. This continued shortage has necessitated increasing dependence upon imports to meet the textile industry's requirements.² It is only recently that the Indian Central Cotton Committee has begun to think in terms of bringing additional area under cotton in the newly irrigated tracts. Then again, in the case of jute the production of which also had fallen short of the target in 1960-61, during the very next year the output has attained an all-time record of 62.7 lakh bales, thus transgressing the Third Plan target. This swing from shortage to abundance has given rise to a fresh problem, namely, the depression of raw jute prices. These illustrative cases are sufficient to drive home the point that serious imbalances have manifested themselves within the agricultural sector.

Of course, it is perfectly understandable if such serious distortions in production levels were the result solely of fluctuations in per acre yields; because, as pointed out earlier, yields have yet to yield themselves to precise planning. What would be disturbing, however, is if even the allocation of land or acreage to different crops does not accord with the priorities and targets set out in the Plans.

THE CASE OF SUGARCANE

This is what seems to have happened in the case of sugarcane. Although production of sugarcane has increased by as much as 36 per cent during the decade, the most important point to be underlined is the fact that nearly 70 per cent of this increase has been brought about by extension of area under the crop. Productivity or the yield per acre went up by only 9.1 per cent, during the period, or by hardly 1 per cent per year (See Table II). The expansion in acreage is particularly noticeable during the Second Plan, as can be seen from Table III. As against a 4 per

1. Report on the Revision of Price-Linking Formula for sharing sugar price between sugar factories and cane growers, 1961.

2. Annual imports have hovered around 10 lakh bales during the three years 1959-62, as against the normal figure of about 6 lakh bales.

cent increase witnessed during the First Plan period, sugarcane acreage during the Second Plan period expanded by 30 per cent, which far exceeds the acreage expansion under the three major non-food crops, namely, oilseeds, cotton and jute. Thus, sugarcane claimed as much as 19 per cent of the *total additional* area under non-foodgrains during the Second Plan period as against a negligible share of 1 per cent during the First Plan period.

TABLE II—PERCENTAGE INCREASE IN AREA, YIELD PER ACRE AND PRODUCTION IN 1958-59/1960-61 OVER 1949-50/1951-52

Crop	Area	Yield	Production
Rice	9.8	27.4	39.9
Wheat	32.1	17.8	55.6
Sugarcane	24.7	9.1	36.0
Cotton	30.1	20.7	57.0
Jute	11.0	6.4	18.1
Tobacco	14.0	— 2.9	10.7
All Crops	15.0	18.6	36.4

Source : Agricultural Production and Productivity During the Plan Periods, Dr. V. K. R. V. Rao, *Indian Journal of Agricultural Economics*, Vol. XVII, No.1, January-March, 1962.

TABLE III—EXPANSION OF ACREAGE UNDER SOME COMMERCIAL CROPS

Particulars	('000 acres)					
	1950-51	1955-56	1960-61	Increase (+) Decrease (—)		
				(2) over (1)	(3) over (2)	(3) over (1)
1	2	3	4	5	6	
1. Area under Non-food crops	45,626	57,173 (+25)	63,540 (+11)	+ 11,547	+ 6,367	+ 17,914
2. Area under Sugarcane	3,864	4,016 (4)	5,238 (+30)	+ 152 (1)	+ 1,222 (19)	+ 1,374 (8)
3. Area under Oilseeds	24,993	29,323 (+17)	32,430 (+11)	+ 4,330 (38)	+ 3,107 (49)	+ 7,437 (42)
4. Area under Cotton	12,667	18,631 (47)	19,383 (+4)	+ 5,964 (52)	+ 752 (12)	+ 6,716 (38)
5. Area under Jute	1,136	1,403 (+24)	1,682 (+20)	+ 267 (2)	+ 279 (4)	+ 546 (3)

Note :—(1) Figures in columns (1), (2) and (3) represent the triennial average for the year ending.
 (2) Figures in brackets in columns (2) and (3) represent percentage increase or decrease over the preceding period.
 (3) Figures in brackets in columns (4), (5) and (6) represent percentage share of total change under non-food crops.

Then again, in the matter of allocating the *additional* acreage under sugarcane among different States, further distortions seem to have crept in. Of the total increase of 1,222 thousand acres, as much as 926 thousand acres or about 75 per cent of the total increase has been claimed by the three Northern States, U.P., Bihar and Punjab. It is well-known that both from the point of view of per acre yield and recovery percentage, the Southern States like Maharashtra, Mysore, Madras and Andhra Pradesh are more efficient than the States in the sub-tropical belt in the Northern Zone.³ Thus, in the first place, the extent of the increase in area under sugarcane was not warranted by the Plan targets; and secondly, the allocation of the *additional* area among different States has not been based on any scientific principles. Incidentally, the second aspect highlights a corollary of the definition of a rational crop pattern, namely, that the allocation of additional acreage under a particular crop among the different States should be based on the relative efficiency in production commanded by each State.

Price and Other Incentives

Such expansion in acreage has come about directly as a response to favourable prices for sugarcane and also indirectly because of the various incentives offered to co-operative sugar factories. A preliminary examination of the price parity ratios of sugarcane *vis-a-vis* substitutable crops in Punjab and Bihar bears out the price responsiveness. Price parity ratios of sugarcane *vis-a-vis* the substitutable crops have been worked out for the two States on the basis of the minimum price (for gate delivery) fixed for sugarcane during each season and the Farm (Harvest) Prices⁴ of the substitutable crops. The changes in the price parity ratios during each year juxtaposed with the changes in sugarcane acreage in the following year have been set out in Tables IV and V. These data bring out clearly a close correspondence between the movements in the price parity ratios and the changes in sugarcane acreage. That is to say, whenever the price ratios have moved in favour of sugarcane, this has resulted in an expansion in sugarcane acreage. The *vice-versa* of this trend also seems to hold true generally.

Turning to the second factor, it may be noted that the statutory fixation of a guaranteed minimum price for sugarcane from season to season on the basis of the quantity regardless of the quality of the cane, the provision made for an additional price entitlement out of the net price realised by the sugar factories,⁵ the obligations vested with the sugar factories—under the different State legislations—in regard to meeting their requirements of sugarcane supplies and the special incentive scheme introduced from the 1959-60 season for promoting sugar production—all these have resulted in providing incentives directly and indirectly for sugarcane cultivation and in according preferential treatment to this crop *vis-a-vis* other alternative crops. The sugarcane co-operatives in U.P. and Bihar are also in a uniquely privileged position in so far as they have a single legally secured

3. "Even if the costs of cultivation per acre incurred to realise better yields are higher, the costs per maund in such favourably placed areas should work out much lower." Report of the Tariff Commission, *Op. cit.*, p. 34.

4. Wherever these are not available rough estimates have been made on the basis of wholesale prices in the State under reference.

5. Although due to practical difficulties no actual payment on this account has been made to growers, its impact on acreage expansion can hardly be discounted.

TABLE IV—CHANGES IN PRICE PARITY RATIO AND ACREAGE UNDER SUGARCANE—
PUNJAB

					('000 acres)
Year	Price parity ratio				Changes in acreage under sugarcane
			1	2	
1949-50	1.	Jowar	=	0.220	} 373
	2.	Bajra	=	0.190	
	3.	Maize	=	0.190	
	4.	Cotton	=	0.067	
Changes in price parity ratios					
1950-51	1.	Jowar	=	No change	} +93
	2.	Bajra	=	- 0.010	
	3.	Maize	=	- 0.040	
	4.	Cotton	=	- 0.009	
1951-52	1.	Jowar	=	- 0.080	} -32
	2.	Bajra	=	- 0.050	
	3.	Maize	=	+ 0.030	
	4.	Cotton	=	+ 0.012	
1952-53	1.	Jowar	=	- 0.020	} -47
	2.	Bajra	=	- 0.020	
	3.	Maize	=	- 0.030	
	4.	Cotton	=	- 0.021	
1953-54	1.	Jowar	=	+ 0.040	} +27
	2.	Bajra	=	+ 0.030	
	3.	Maize	=	+ 0.020	
	4.	Cotton	=	+ 0.003	
1954-55	1.	Jowar	=	+ 0.050	} +38
	2.	Bajra	=	+ 0.030	
	3.	Maize	=	+ 0.040	
	4.	Cotton	=	+ 0.006	
1955-56	1.	Jowar	=	- 0.050	} +35
	2.	Bajra	=	- 0.040	
	3.	Maize	=	- 0.030	
	4.	Cotton	=	- 0.007	
1956-57	1.	Jowar	=	- 0.010	} + 7
	2.	Bajra	=	- 0.030	
	3.	Maize	=	No change	
	4.	Cotton	=	No change	
1957-58	1.	Jowar	=	+ 0.020	} +21
	2.	Bajra	=	+ 0.050	
	3.	Maize	=	- 0.010	
	4.	Cotton	=	- 0.001	
1958-59	1.	Jowar	=	- 0.030	} +77
	2.	Bajra	=	- 0.040	
	3.	Maize	=	- 0.020	
	4.	Cotton	=	+ 0.002	
1959-60	1.	Jowar	=	- 0.010	} +72
	2.	Bajra	=	+ 0.010	
	3.	Maize	=	+ 0.050	
	4.	Cotton	=	+ 0.005	

TABLE V—CHANGES IN PRICE PARITY RATIO AND ACREAGE UNDER SUGARCANE—BIHAR

('000 acres)

Year	Price parity ratio				Changes in acreage under sugarcane
			1		2
1949-50	1.	Wheat	=	0.073	} 410
	2.	Barley	=	0.130	
	3.	Gram	=	0.120	
Changes in price parity ratios					
1950-51	1.	Wheat	=	- 0.011	} -74
	2.	Barley	=	- 0.041	
	3.	Gram	=	- 0.034	
1951-52	1.	Wheat	=	+ 0.018	} +23
	2.	Barley	=	+ 0.031	
	3.	Gram	=	+ 0.024	
1952-53	1.	Wheat	=	- 0.011	} -60
	2.	Barley	=	- 0.023	
	3.	Gram	=	- 0.026	
1953-54	1.	Wheat	=	+ 0.014	} +27
	2.	Barley	=	+ 0.033	
	3.	Gram	=	+ 0.026	
1954-55	1.	Wheat	=	+ 0.017	} +52
	2.	Barley	=	+ 0.070	
	3.	Gram	=	+ 0.050	
1955-56	1.	Wheat	=	- 0.006	} +25
	2.	Barley	=	- 0.060	
	3.	Gram	=	- 0.040	
1956-57	1.	Wheat	=	- 0.017	} -27
	2.	Barley	=	- 0.020	
	3.	Gram	=	- 0.023	
1957-58	1.	Wheat	=	+ 0.012	} +29
	2.	Barley	=	+ 0.010	
	3.	Gram	=	+ 0.023	
1958-59	1.	Wheat	=	- 0.013	} +38
	2.	Barley	=	- 0.030	
	3.	Gram	=	- 0.036	
1959-60	1.	Wheat	=	+ 0.006	} +15
	2.	Barley	=	+ 0.020	
	3.	Gram	=	+ 0.016	

buyer, *i.e.*, the sugar factory and a guaranteed return by way of a statutorily fixed minimum price. About 95 per cent of the cane crushed in U.P. and about 50 per cent of that in Bihar are supplied by the Sugarcane Co-operatives.

Further, of 53 new sugar factories licensed during the first two Plans, as many as 38 were co-operatives. These co-operatives received assistance in a variety of ways. For instance, of the total loans amounting to Rs. 84.64 crores sanctioned by the Industrial Finance Corporation, nearly Rs. 19 crores or about 22 per

cent of the total represented loans provided for the 32 co-operative sugar factories.⁶ That these sugar factories claimed a rather disproportionate share of assistance from various agencies has been brought out forcibly by Prof. M. L. Dantwala, who after presenting what amounts to a catalogue of assistance so received, remarked: "Whether so much of the scanty financial resources of the Government and the central financing agencies... should have been diverted for purposes of co-operative processing of sugarcane by just one lakh of comparatively well-to-do sugarcane cultivators, is a question which needs serious consideration."⁷

The case of sugarcane underlines the fact that in moulding the crop-pattern according to the Plan targets, merely regulating the relative prices may not be enough; various other aspects of development have also to be so fashioned as to be in harmony with the desired shifts in crops.

Alternatives Foregone

By way of indicating what exactly such undesirable expansion of sugarcane acreage may mean in terms of alternative crops foregone, one or two calculations may be attempted. It may be said that even if *the entire* increase in acreage under sugarcane in the three Northern States had *not* come about, production of sugarcane at about 8 million tons (in terms of *gur*) would still have reached its Second Plan target. In other words, nearly a million acres of land would have become available in these States for the production of other crops, which in terms of wheat would have meant a production of about 5 lakh tons.

Further, nearly 70 per cent of the sown area under sugarcane is irrigated—incidentally, this is the highest percentage claimed by any crop. During the period 1952-59, about 4 lakh acres of *additional* irrigated area were brought under sugarcane. Suppose that putting the *newly* irrigated area under sugarcane was prohibited—and this is operationally feasible. These 4 lakh acres alone would have produced more than 2 lakh bales of cotton,⁸ presuming that it was technically feasible to grow cotton on these lands.

What would be the economy in total acreage that can be brought about if the entire sugarcane production of the country is entrusted to those States which are more efficient, *i.e.*, the Southern States? This amounts to working out the total acreage that can be released for production of other crops in the Northern States, if the yield in these States is raised to about the same level as that obtaining in Southern States. From the data presented in Table VI, it is clear that the average yield per acre in the Northern States is only one-half of the average for the Southern States. Thus, without affecting the present level of sugarcane production, about 50 per cent of the area under sugarcane in Northern States, that is, roughly 2.2 million acres could be released for production of other crops. The area so released could produce, at the present yield rates in the respective States, nearly 8.5 lakh tons of wheat or more than 7 lakh bales of cotton.

6. Position as on June 30, 1960.

7. Presidential Address at the All-India Agricultural Economics Conference, Chandigarh, 1960.

8. On the basis of an yield of 200 lbs. per acre as in the case of Punjab.

TABLE VI—AREA, PRODUCTION AND YIELD PER ACRE OF SUGARCANE (GUR) IN IMPORTANT SOUTHERN AND NORTHERN STATES (1960-61)

	All-India	Important Southern States*	Important Northern States**
Area under sugarcane ('000 acres)	5,789	840	4,406
Production of sugarcane (<i>gur</i>) ('000 tons) ..	10,447	2,647	7,061
Yield per acre lbs. (in terms of <i>gur</i>)	4,042	7,059	3,590†

* Southern States comprise Andhra Pradesh, Madras, Maharashtra and Mysore.

** Northern States comprise Bihar, Punjab and Uttar Pradesh.

† Because of the introduction of crop cutting Survey for the first time in U.P. the estimate of sugarcane production in that State in 1960-61 was heavily revised upwards. To that extent the yield per acre in Northern States in 1960-61 has been inflated as compared to earlier years.

Although admittedly there might be other difficulties involved in switching over from sugarcane to other crops, these calculations do indicate the dimensions of the alternative crops foregone—crops the production of which demanded priority in terms of plan targets.

THE CASE OF JUTE AND RICE

Price Parity and Acreage

Another interesting case where the relative prices seem to determine the acreage sown to crops is that of the two substitutable crops—jute and rice. It is the relative prices of jute and rice which prevail during the period preceding the sowing season of jute that appear to determine the acreage under these crops. Such shifts in acreage between jute and rice brought about by price changes are concretely illustrated in the case of West Bengal and Assam in both of which these two crops alone account for about 80 per cent of the area under all (forecast) crops. In Table VII the year-to-year variations in the price-parity ratio and the corresponding variations⁹ in the area under jute and rice are presented for the 12 years between 1950-62. In the case of West Bengal it can be seen that an increase in the price-parity ratio (column 2) has resulted in an increase in the area under jute (column 3); and also, as a consequence, a decline in the area under rice (column 4).¹⁰ The reverse of this trend also holds true generally. Such general response of jute/rice acreage to the price-parity ratio also holds good with respect to Assam for all the years with one or two solitary exceptions. These data, therefore, go to establish unmistakably the correspondence between the acreage under jute/rice and the relative prices of these commodities.

9. For details of data used, please see footnote to the Table.

10. The *magnitude* of the shifts in acreage can be fully comprehended with the help of changes in the area under all crops. Since this is not directly relevant here, only the *direction* of shifts is indicated.

TABLE VII—VARIATIONS IN AREA UNDER JUTE AND RICE AND PRICE PARITY :
WEST BENGAL AND ASSAM

('000' acres)

Year	Jute/Rice price parity before sowing†	West Bengal Actual variation over the previous year in the area under		Assam Actual variation over the previous year in the area under	
		Jute 3	Rice 4	Jute 5	Rice 6
1950-51	1.48	—	—	—	—
1951-52	1.97	+ 231	— 332	+ 85	+ 139
1952-53	1.68	— 56	+ 701	— 21	+ 56
1953-54	0.84	— 289	+ 320	— 29	— 1
1954-55	1.17	+ 38	— 825	— 2	— 42
1955-56	1.96	+ 228	+ 321	+ 85	+ 113
1956-57	1.46	— 106	+ 23	— 12	+ 5
1957-58	1.39	+ 39	+ 64	— 33	— 102
1958-59	1.24	+ 117	— 376	+ 1	+ 125
1959-60	1.22	— 52	+ 382	+ 11	— 128
1960-61	1.36	— 104	+ 463	— 35	+ 111
1961-62	2.60	+ 424	— 445	+ 64	+ 56

† Based on the average for four months—January to April—of the All-India Index Numbers of Wholesale Prices (1952-53=100) of Jute and Rice. It would have been more relevant to use State Index Numbers but since these are not available, all-India indices are used.

Instrument for Regulating Acreage

The existence of this close correspondence goes to suggest a possible policy implication. The Third Plan has explicitly stated that the price policy "must ensure that the movements of relative prices accord with priorities and targets that have been set in the plan."¹¹ Perhaps the parity ratio could be used, within certain limits, as an instrument for regulating the shifts in acreage from one crop to another in the desired direction. In this connection it may be relevant to refer to Clark's article in which he has demonstrated that it is possible to assess with reasonable precision the magnitude of the shifts in acreage in response to a given change in prices.¹² Using a more sophisticated statistical technique he has estimated, on the basis of empirical data for East Bengal, that a rise of 50 per cent in prices of jute, rice prices remaining the same, brought about an increase, on an average, of about 395 thousand acres in the area under jute. On the other hand, a decline in the prices of jute by 50 per cent, with rice prices remaining the same, caused a reduction, on an average, of 667 thousand acres. The point is that apart from the details of operational problems it seems possible to regulate the acreage under these crops by a suitable manipulation of the parity ratio.

Although this possibility is recognised in principle, in practice no definite policy seems to have been followed. The unprecedented rise in raw jute output in 1961-62 provides a conspicuous instance in point. This peak production, which created a crisis of surplus, is a direct result of the abnormal rise in raw jute prices during 1960-61, the price index (average of months) rising from 125 in 1959-60 to 210 in 1960-61, accompanied by a negligible rise in the prices of rice.

11. Third Five-Year Plan, p. 119.

12. "The Economic Determinants of Jute Production," Ralph Clark, *F.A.O. Monthly Bulletin of Agricultural Economics and Statistics*, September, 1957.

It should be noted that almost the entire rise in production is accounted for by the increase in acreage; while production rose by 57 per cent, area under jute increased by as much as 50 per cent, the yield per acre rose by only 5 per cent. This instance also underlines the advisability of adopting acreage targets so that such sharp swings in production resulting mainly from shifts in acreage would not be permitted to manifest themselves. Any serious deviation from the acreage target could be set aright with the help of the parity prices.

CONCLUDING REMARKS

The targets of agricultural production as formulated at present on the basis of "yardsticks", *i.e.*, results anticipated on the completion of a number of development programmes, are based on rather shaky foundations.¹³ In fact the development programmes seem to constitute the *essential targets* of the Plan and the production targets are only incidental to them. The adoption of acreage targets, as pleaded for earlier, would not only lend some concreteness to these aggregate production targets but also facilitate the formulation of "area plans", which Prof. D. R. Gadgil has been advocating for quite some time.¹⁴

This paper is more in the nature of an exploratory attempt. The point is that it should be possible to draw up acreage targets both crop-wise and State-wise for, say, 1965-66, *i.e.*, the end of the Third Plan, taking into account the extent of land reclamation, additional area to be irrigated, substitutability of crops, etc. The States, for instance, could be ranked in order of their relative efficiency in production of different crops and additional area to be added to a particular crop may be allocated to the more efficient States. A similar procedure may be followed in drawing up the district and taluka targets. Such a plan of crop pattern would not permit the mal-allocation of land, as has happened in the case of sugarcane to manifest itself; nor would the sharp swings in acreage, as witnessed in the case of jute, be allowed to distort the plan priorities. For, when once the broad contours of the desirable crop pattern are drawn, it would be easy to design the strategic intervention with a view to promoting the pattern. Whenever signs of serious mal-allocation begin to emerge the explicit aim of policy should be to correct the trend through the manipulation of relative prices in the case of substitutable crops, or through regulation of cropping pattern in the newly irrigated areas, 'zoning' certain areas, or by offering incentives like rebate on water rates, credit, etc., and so on. It may be recalled that even in a country like Nigeria the policy of raising the quality of certain agricultural produce by offering price incentives to peasant producers yielded remarkable response.¹⁵ This potential instrument does not seem to have been used in any meaningful manner in India so far. The precise nature and the area of intervention could be decided upon with reference to the specific situation. Thus without resorting to any comprehensive regulation of the cropping pattern in the country as a whole, it seems possible to ensure a more rational distribution of acreage to different crops with the minimum of intervention at strategic points.

13. For detailed discussion of this aspect see Planning for Agricultural Development in India, D. R. Gadgil, included in the book : Planning for Economic Policy in India, 1961.

14. *Ibid.*

15. "A Case Study of Response to Price in an Under-developed Economy," P. T. Bauer and B. S. Yamey, *The Economic Journal*, December, 1959.