

Growth Stage Theories and Agricultural Development Policy

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This paper reviews and attempts to evaluate the potential contribution of growth stage theories to the formulation of agricultural development policies.

As economists have been asked to extend their services to policy makers and planners in countries which are just beginning to experience modern economic growth, a consensus has developed to the effect that economic analysis conducted within the framework of either the older developments associated with the "marginal revolution" or post-Keynesian income, employment and growth theory has been less effective than anticipated in providing the knowledge needed to solve the development problems of the emerging non-western economies.

No clear-cut system of "new development economics" dominates the field as completely as the "new economics" based on Keynes' work dominated economic thinking after 1936. However, the growth stage approaches have established a substantial "claim" in the race to stake out the boundaries of a "new development economics."

GROWTH stage theories are not new in the history of economic thought. The older literature, primarily a product of the nineteenth century German economic historian, exhibits three main types of stage schema based on:

(a) shifts in occupational distribution (List);

(b) changes in the degree of economic integration (Hilderbrand, Bucher, Schomoller); and,

(c) changes in the system of property rights and associated changes in economic ideology (Sombart, Marx).

Industrial Fundamentalism

List distinguishes five development stages: (a) savage; (b) pastoral; (c) agricultural; (d) agricultural and manufacturing; and finally, (e) agricultural, manufacturing, and commercial. However, he stresses "a description of the conditions under which a mature agricultural stage can exist, under which it may progress, and how an agricultural stage can be transformed into one on a higher level by the introduction of manufacturers".

He was particularly concerned with demonstrating the positive role of industrial protectionism for countries (such as Germany or the United States in the nineteenth century) which were in transition from a high level of agricultural development to industrialisation. At the same time, he argued that free trade was to appropriate economic policy for countries (a) which are "by nature" agricultural or which have not yet achieved a high level of agricultural development (mainly tropical), and (b) which have achieved an advanced level of industrial development (such as Great Britain). List believed that progress in agricultural could only occur (a) under the stimulus of export demand, or, more important, (b)

through the impact of domestic industrial development.

Structural Transformation

There is a close resemblance between List's last three stages and the concept of primary, secondary, and tertiary production developed in the 1930's by A G B Fisher and Colin Clark. This formation emphasised the "steady shift of employment and investment from the essential 'primary' activities ... to secondary activities of all kinds, and even to a still greater extent into tertiary production" which accompanies economic progress. The economic growth which accompanies this transformation is achieved *first*, by increases in output per worker in any sector, and *second*, by the transfer of labour from sectors with low output per worker to sectors with higher output per worker.

The Fisher-Clark generalisations had an important impact on both economic thought and economic policy during the decade immediately following World War II. But by the mid-1950's, the analytical validity and statistical foundation, as well as the policy implications of these generalisations were being questioned.

Leading Sectors

The decline of interest in the Fisher-Clark stages during the last decade resulted primarily from the emergence of Rostow's leading sector growth stage approach. Rostow identifies five stages in the transition from a primitive to a modern economy: (a) the traditional society; (b) the preconditions for take-off; (c) the take-off; (d) the drive to maturity; and (e) the age of high mass consumption.

Rostow is primarily concerned with the process by which a society moves from one stage to another, and his historical analysis is conducted to pro-

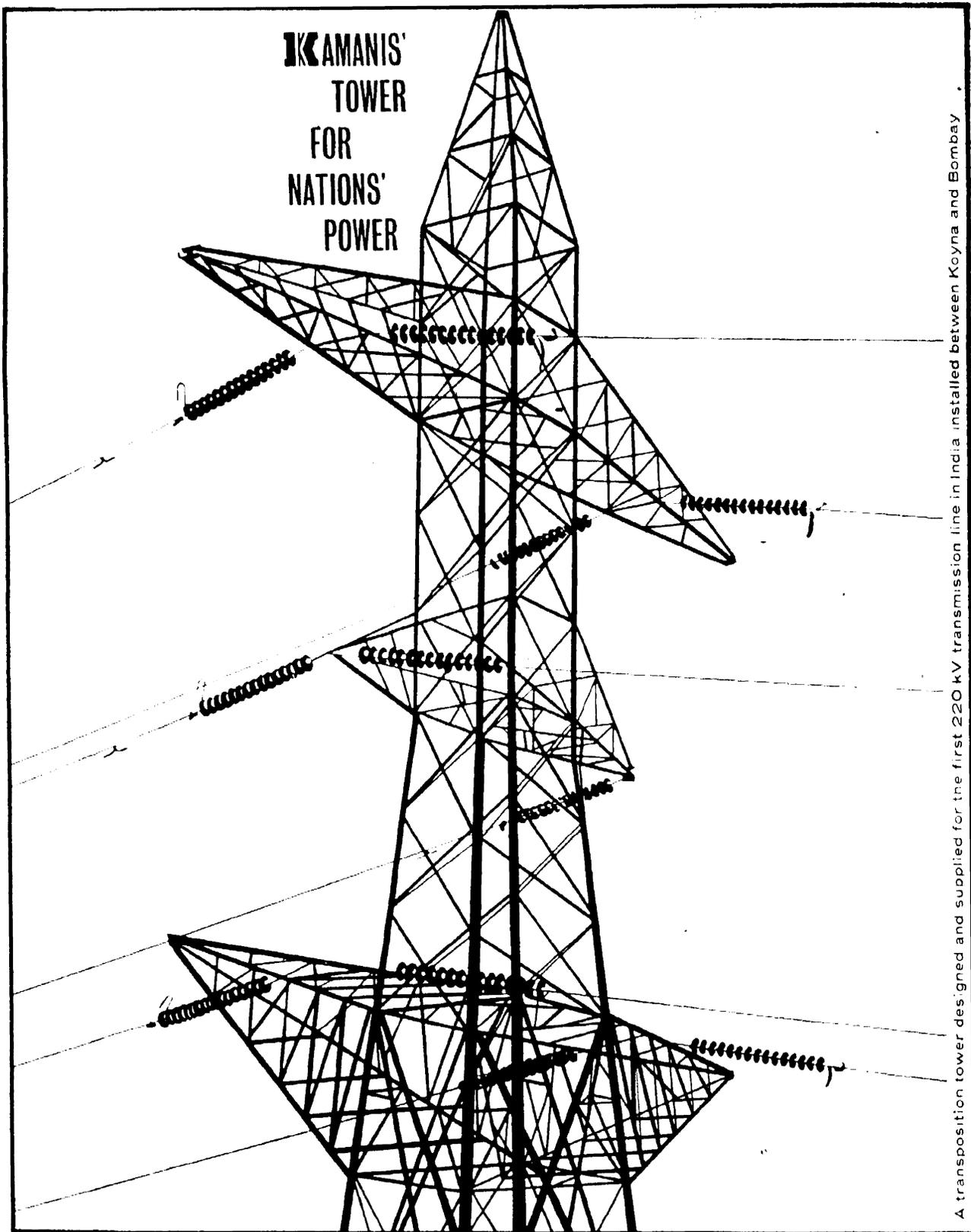
vide policy guidance to the developing countries since "it is useful, as well as roughly accurate, to regard the process of development now going forward in Asia, the Middle East, Africa and Latin America as analogous to the stages of preconditions and take-off of other societies in the late eighteenth, nineteenth, and early twentieth centuries".

The problem of transition from one stage to another in Rostow's system becomes how to offset the tendency for deceleration in individual sectors to achieve growth in the total economy.' On the supply side, Rostow introduces the concept of a sequence of leading sectors which succeed each other as the basic generators of growth. On the demand side, declining rates of growth in demand are introduced as factors dampening the growth rates of leading sectors and transforming them to sustaining or declining sectors. Technology plays an important role in both the emergence of new leading sectors and the dampening of growth or elimination of older sectors.

Only Rostow's system clearly recifies a dynamic role for the agricultural sector in the transition process. In an open economy, primary sector industries may act as leading sectors and, at a particular time, carry the burden of accelerating growth. In addition, agriculture must (a) provide food for a rapidly increasing population; (b) provide a mass market for the products of the emerging industrial sectors, and (c) generate the capital investment for new leading sectors outside of agriculture.

Most of the papers presented at a 1960 conference of the International Economic Association on "The Economics of the Take-Off Into Sustained Growth" rejected (a) either Rostow's dating of the take-off for presently advance countries or (b) the concept of the take-off itself. Students from less

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developed countries have found even greater difficulty in identifying their experience with any particular stage. A recent article reached the rather startling conclusion that "after entering the 'take-off' stage in 1957, the (Philippine) economy immediately sapped back into the 'preconditions' .. , stage . . ." Furthermore, the approach contains no mechanism to explain why countries such as Argentina, Chile, Ceylon, Burma and India, all of which experienced very rapid growth during the latter years of the 19th century, failed to achieve a successful take-off.

Agricultural Development Stages

The insights into the general growth process provided by the several growth stage approaches has led to a re-examination of agricultural development patterns within the context of growth stage sequences by western economists.

The Industrial Impact Hypothesis

The implications of the Fisher-Clark structural transformation model for the agricultural sector have been formulated by Schullz in the form of three statements: (1) "Economic development occurs in a specific locational matrix... ; (2) These locational matrices are primarily industrial-urban in composition... ; (3) The existing economic organisation works best at or near the centre of a particular matrix of economic development and it also works best in those parts of agriculture which are situated favourably in relation to such a centre. In formulating this hypothesis, Schultz was particularly concerned with the failure of agricultural production and price policy to remove the substantial regional disparities in the rate and level of development in American agriculture.

The policy implications of the Schultz industrial impact hypothesis appear to be most relevant for the less developed regions of the more highly industrialised countries. In these areas, agricultural development can be accelerated by either increased industrial decentralisation or migration of surplus agricultural workers to more distant urban-industrial centres. Such policies appear to have less scope in many of the less developed countries where the "pathological" growth of urban centres resulting from population pressure in rural areas frequently runs ahead of growth in the demand for non-farm workers.

Three-Stage Sequence

A sequence of three agricultural development stages which roughly

parallel the precondition, take-off, and drive to maturity stages in the Rostow model has been suggested by a number of agricultural economists.

In the agricultural development stage models, major policy interest focuses on the programme instruments and measures that are required to move rapidly from Stage I (Static) through Stage II (Transitional) to Stage III (Dynamic). Within the agricultural sector, emphasis is typically placed on (a) the importance of biological innovations and intensity of labour use during the transition from Stage I to Stage II with (b) higher inputs of power in the form of mechanisation being reserved for the transition from Stage II to Stage III. Recommendation that public social overhead investments (education, research, extension) and institutional -modifications (tenure, credit, and market structure reforms) should lead the more capital intensive public infra-structure investment (communications, roads, dams) is also frequently implied. The importance of positive population policy to dampen the birth rate is increasingly identified as essential for a rapid transition from Stage I to Stage III.

Some authors have followed Rostow in emphasising the importance of leading commercial sectors within agriculture, in contrast to the more static subsistence sectors, in the adoption of technological innovations and as a source of much of the increase in the output of food and export commodities. Others, using Japan and Taiwan as models, emphasise the possibilities of transforming the subsistence sector into a small scale commercial sector.

The issue that remains unresolved is (a) can growth be achieved most effectively by the commercial sector absorbing the land resources and releasing the labour resources of the subsistence sector for non-farm employment, or (b) can the subsistence sector be gradually transformed into a small scale commercial sector and eventually into a large scale commercial sector? The difficulty of resolving this issue, within the framework of growth stage analysis, is symptomatic of the difficulty faced by stage approaches in generating useful guides to agricultural development policy at any particular time in economic history.

Growth Stage Theories and Agricultural Policy Analysis

What guidance can the economic analyst working within the context of growth stage models provide the policy

maker or planner in making the policy decisions and formulating the programme designs necessary to achieve more rapid agricultural development? One method of answering this question is to examine the policy prescriptions implied by the agricultural growth stage approaches for several of the agricultural development choices which the nations of Southeast Asia now face.

Agricultural Production Policy

Throughout most of Southeast Asia, population growth rates fall in the 2.5 to 3.5 per cent *per* year range. Thus, even modest per capita income growth rates imply an increase in the demand for farm output of 3.0 to 5.0 per cent per year. During the interval which precedes effective population control, this range may well result in rising food prices, and as Rostow stresses, dampen the rate of total economic growth.

Example 1: Irrigation

The agricultural growth stage models, drawing heavily on Japanese experience, stress the importance of biological innovations and labour intensive methods of production during the early stages of agricultural development. Yet in most of Southeast Asia, the productivity of many of the biological innovations and labour intensive cultural practices, regarded as appropriate in Stage I, will be severely limited until the completion of capital intensive irrigation developments. In spite of a monsoon climate, lack of water is an important obstacle to full employment of both land and manpower in most rice producing areas of Southeast Asia.

Example 2: Mechanisation

Growth stage models typically identify mechanisation as appropriate only during the later part of the transition from Stage II to Stage III. Modifications are frequently introduced for economies with a dual (i.e., plantation and subsistence) structure in the agricultural sector which favour mechanisation in the plantation sector earlier than in the subsistence sector.

An increasing body of evidence from South and Southeast Asia provides specific instances of relatively high returns on investment in mechanical power in the subsistence sector. Even in densely populated areas there are substantial areas of land which are not cultivated at all or only during certain parts of the year because (a) the power requirements run in excess of the amount available in the traditional man-animal technology, or (b)

operations cannot be performed at sufficient speed to utilise the land at a high level of intensity. In such situations, analysis of the productivity of power inputs cannot be treated entirely within a labour substitution framework or depend on historical analogies with small scale agricultural development in temperate regions-

Structural Change

Both Rostow and the agricultural development stage theorists have emphasised the importance of structural changes during the early stages of economic development. Tenure reform, fiscal policy reform, and others have identified as important factors in reducing the political power of those who have a vested interest in the *status quo*, and releasing the productive energies of the peasants and the emerging middle class.

With these reforms agricultural prosperity is expected to stimulate industrial development by providing the mass purchasing power needed to sustain an expanding urban-industrial sector. Since initiation of steps leading to exchange decontrol in the Philippines in 1961, the agricultural and commodity sectors have experienced sustained increases in prices, output, and income. At the same time the sectors producing primarily for domestic consumption have, with the exception of the domestic agriculture and construction industries, failed to share in this growth.

One explanation for this paradox of prosperity in the commodity sectors and lagging growth in the manufacturing sectors is that the higher aggregate income in the agricultural and commodity sectors reinforces an already highly unequal income distribution. As a result, the income is being utilized for non-industrial construction and importation of consumer durables rather than the purchase of the mass consumption consumer goods produced by local industry.

Use of political means to alter the income distribution effects of expanded export earnings or to achieve any of the desired structural reforms, is particularly difficult to achieve in practice. Agricultural prosperity reinforces the political power of the same groups who benefit from the present situation and delays the emergence of the appropriate political and social "preconditions".

An Evaluation of the Agricultural Development Stage Approaches

Neither the general stage models nor

the agricultural development stage models provide definitive guides for the resolution of the agricultural development policy issues which have been raised in the previous section. Have they made any positive contribution at all to the analysis of these issues in a manner useful to the policy maker or planner?

(1) Clearly Rostow's leading sector model and the agricultural development approaches have helped focus attention on the critical role of the agricultural sector in the development process. This represents a healthy reversal of the failure to appreciate agriculture's contribution in earlier growth stage approaches and a positive contribution to economic "doctrine" (ideology?).

(2) The leading sector concept does add a potentially useful tool to our analytical capacity. The concept has largely been ignored by the debate

over the timing and/or existence of the "take-off".

(3) The basic limitation of the growth stage approach when employed as a guide to development policy is that it substitutes a search for economic doctrine in the form of historical generalisations, for the development of analytical power.

(4) Emphasis on the "take-off" and the differentiation of "stages" in both the general and agricultural development stage approaches represents a "blind alley" rather than the route to a new "revolution" in economic thought. Even if current disagreements with respect to "take-off" dates could be resolved we would at best be confronted with a set of valid historical generalisations concerning the processes by which countries which are now developed arrived at their current level of development.

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