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THE POTENTIAL EVIL IN HUMANITARIAN FOOD RELIEF PROGRAMS*

Dale Runge

WP 803-75 August 1975

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Introduction

The imbalance between population and food grows increasingly more severe throughout the world. One frequently hears about the ethical obligation of food-surplus countries to send food relief to countries where food production does not meet food needs. The nations of plenty presumably are obliged to do "good", that is, ship food. This article argues that, rather than being "good", sending food relief may be "evil" and therefore unethical. Food relief shipments can alleviate shortages and avert starvation; but, if sustained relief is necessary, the donor cannot in the long run stop sending food without causing more suffering than the relief prevented in the short run.

To appreciate the potential evil in behavior that is usually considered to be humanitarian, we must examine the criteria for judging whether an act is "good" or "evil". The important criterion for this discussion is the impact of the passage of time on the "goodness" of an act. The long-term effects of an act may be quite different from the short-term effects. Therefore, we must adopt a dynamic standard when evaluating an act whose future consequences may be important and different from its immediate effects. A dynamic standard of ethical evaluation takes explicit account of long-term as well as short-term effects. If an act has evil side effects and if in the long run the side effects exceed the benefits in the short run, the act in question cannot be considered "good".

This article explains why the side effects of humanitarian food-relief programs invite the conclusion that such programs are not "good" when viewed from a dynamic perspective. It also attempts to clarify some

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of the implications of development assistance programs that include more than just food relief. The explanation draws upon a computer simulation model which will help sharpen the assumptions and more clearly reveal the consequences of the assumptions.

Model Description*

A mathematical model is a simplification and an abstraction of some portion of the real world that can be useful in assessing programs and policies. Since the important features of food-relief programs for this discussion emerge over time, a mathematical model used to simulate the time-varying behavior of food-relief programs seems especially appropriate.

The model presented here is purposely kept very simple, to focus clearly on the underlying issues presented by food-relief programs. In the model, two hypothetical countries exist. One has a surplus of food and is therefore a potential donor of food through relief programs; the other is short of food and has a dense population, very low per capita income, and a labor-intensive low-capital food production system. Moreover, the amount of land available for cultivation in the food-short country is assumed to be limited. That is, additional land can be brought under cultivation only at a very high cost. This assumption appears quite reasonable for most of the food-short countries of the world today. Therefore, additional labor

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*A full description of the model, together with a lengthier treatment of the issues it addresses, can be found in "The Ethics of Humanitarian Food Relief", by the same author (see Bibliography).

may be able to produce very little additional food. The model also assumes that no migration occurs into or out of either country, and that food productivity losses due to overexploitation of the land are negligible.

The flow diagram in Figure 1 contains the major interactions between population and food production in the food-short model country. The rectangle represents the population in the country, and the valve symbols portray the births and deaths that occur each year. The circle symbols represent respectively the effect that population has on food production, and the effect that food consumption per capita has on population. In this simplified system, births are assumed to be a constant fraction of the population each year, while the death rate increases or decreases depending on how much food per person is available for consumption. Tests can be made to explore the effects on model behavior of changes in the birth rate; this is desirable since we know that the birth rate does change in the real world.

In Figure 1, an increase in population P leads to more workers per hectare WPH. The workers contribute directly to the production of food. Within the limits of the land area in agriculture LAA, taken as a constant, an increase in workers per hectare WPH leads to greater food production per hectare FPPH. The actual amount of food produced from a given area of land is influenced by the capital available for agriculture. The influence of capital on food production is represented in the model by the food-production-from-capital multiplier FPKM. The actual amount of food for consumption FFC equals the sum of food produced locally and food received through food-relief programs. The shipment of food from the

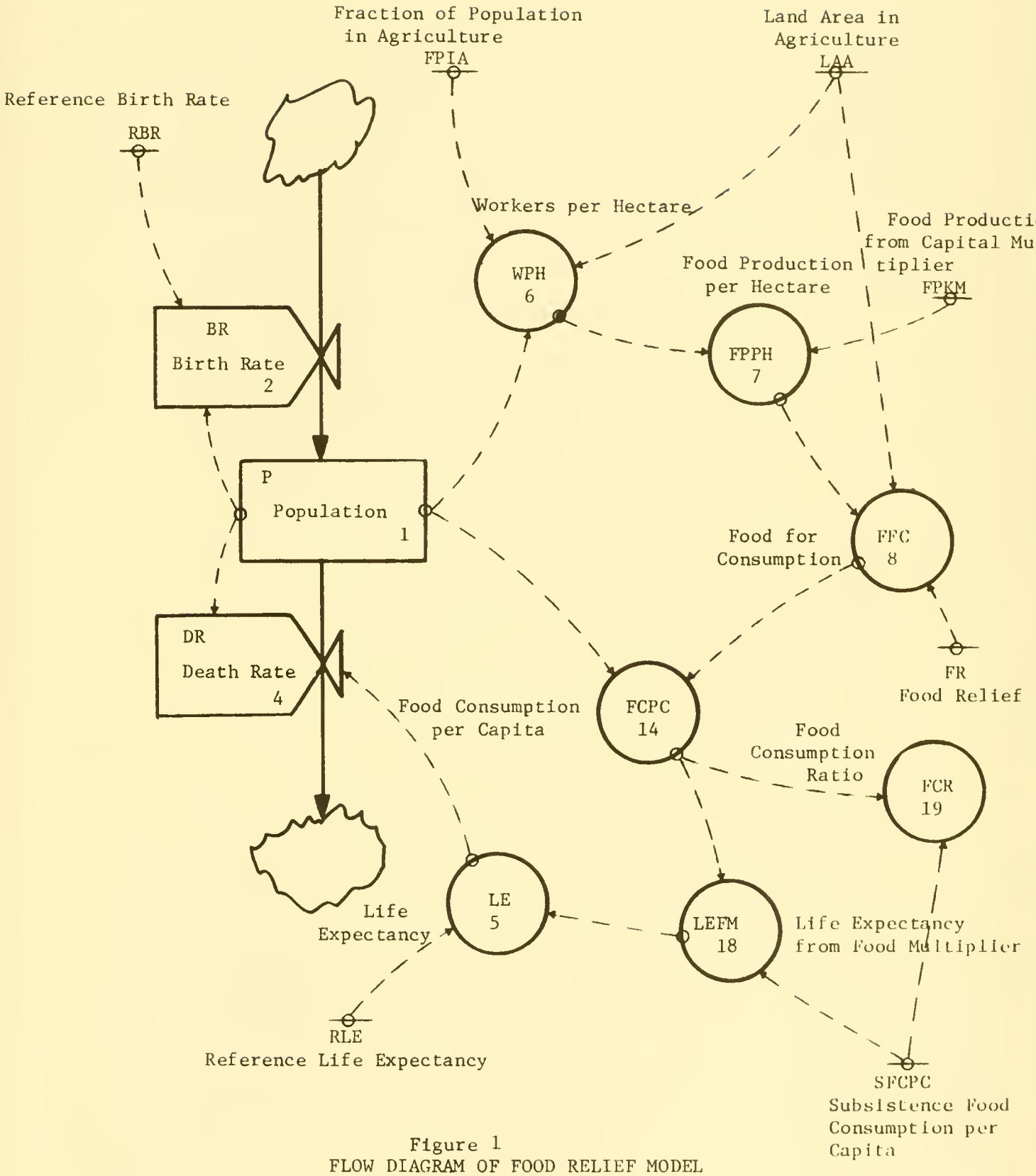


Figure 1
FLOW DIAGRAM OF FOOD RELIEF MODEL

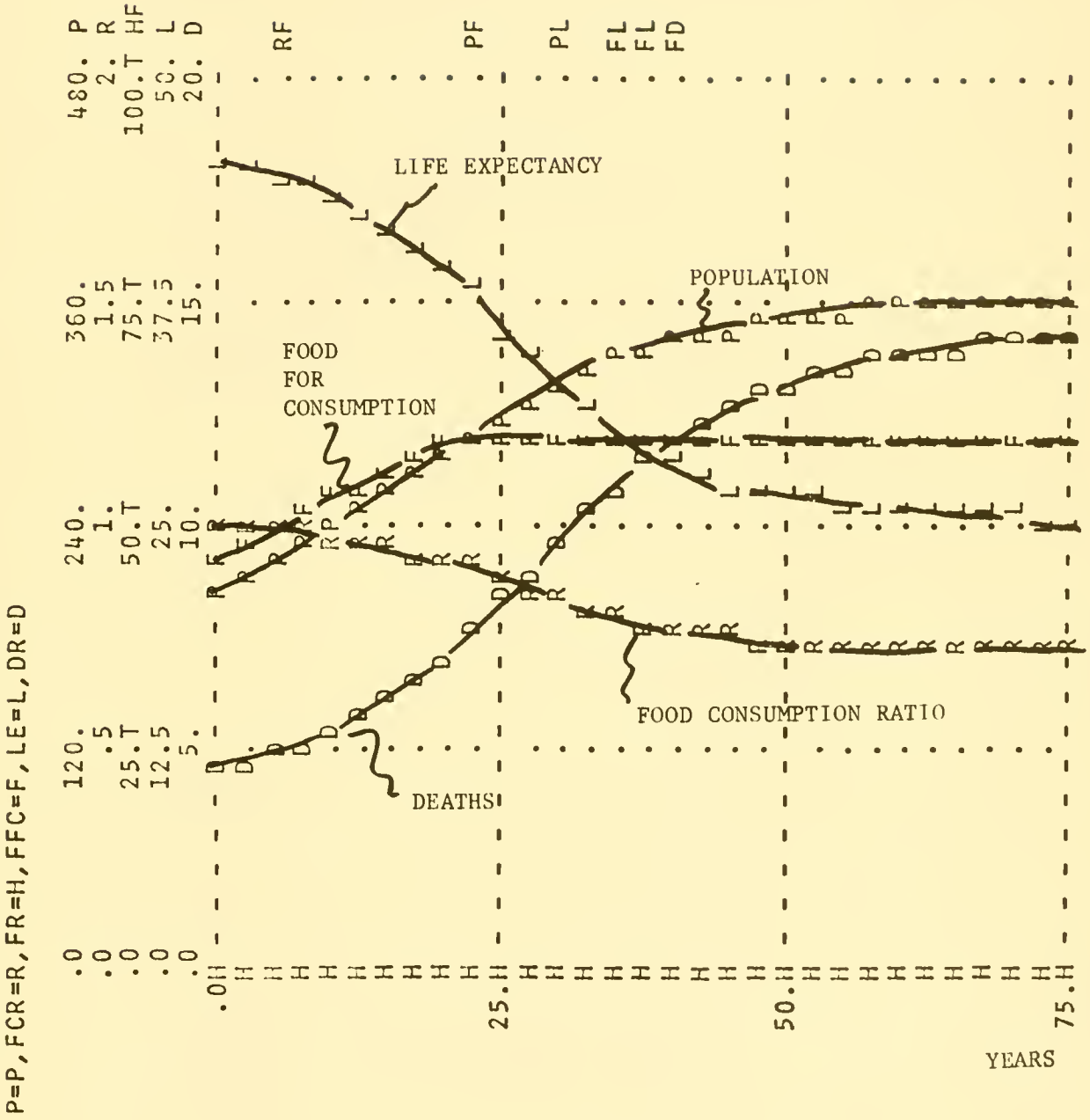
food-surplus country to the food-short country is shown by one variable--food relief FR. The total amount of food divided by the number of people yields the food consumption per capita FCPC, which affects life expectancy LE through the life-expectancy-from-food multiplier LEFM. The LEFM reflects the effect that food per person has on the death rate.

The model outlined in Figure 1 has been used in making the computer simulation runs presented and discussed in the next section of this paper.

Results of Computer Simulation

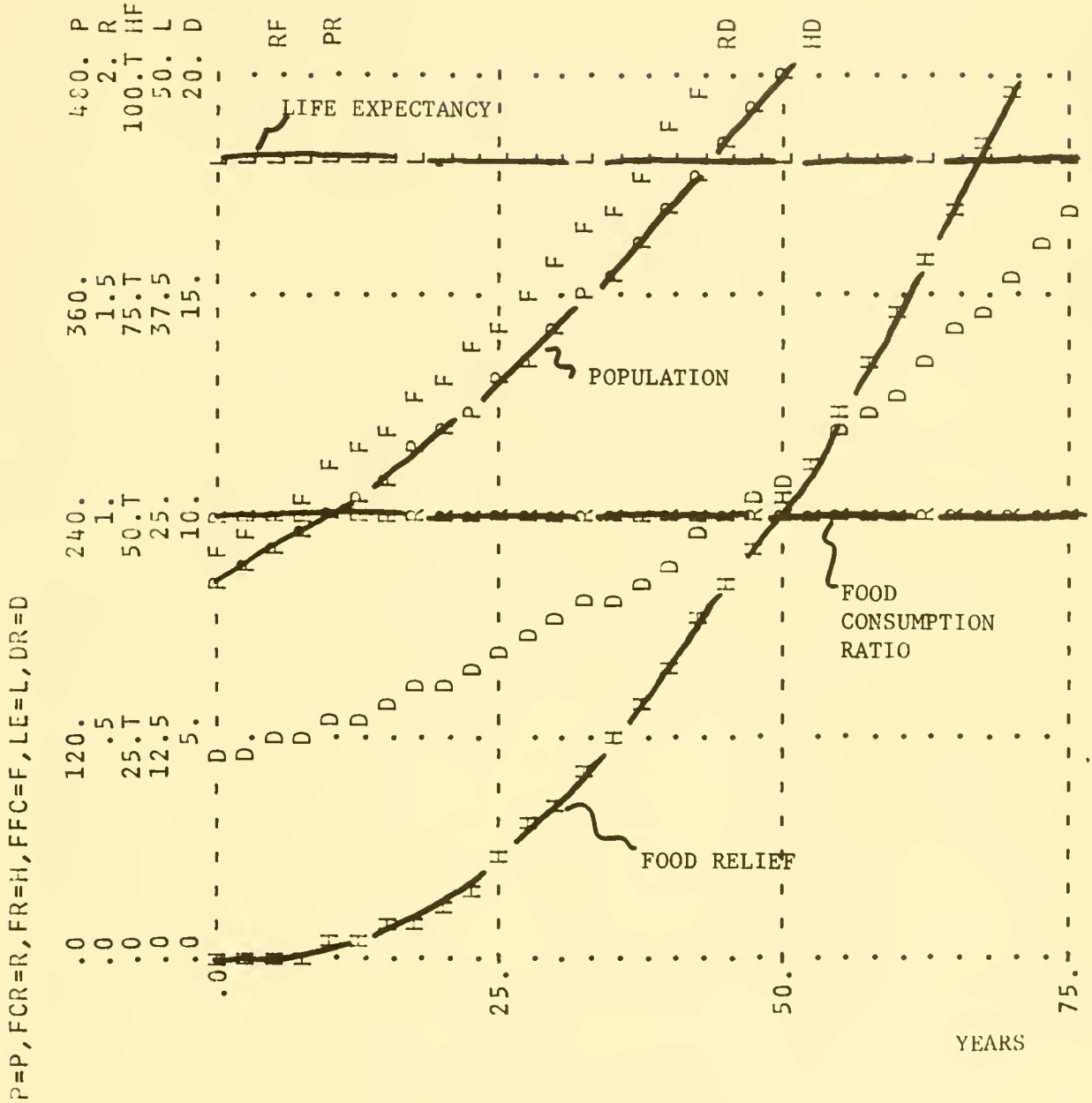
Figure 2 shows the basic behavior of the food-short system when no food relief is available from outside. Due to the limitations of land and capital, food for consumption FFC (plotted as F) reaches a maximum value. Since population P (plotted as P) continues to climb, per capita food consumption, reflected by the food consumption ratio FCR (plotted as R) starts to decline; the decline in FCR causes the death rate DR (plotted as D) to rise. Death rate keeps rising until the population comes into equilibrium at high birth and death rates.

In the real world, when per capita food consumption declines to the extent that the death rate increases significantly, countries with surplus food are reminded of their ethical obligation to send food to food-short countries to prevent starvation. The results of such a policy can be simulated by keeping the food consumption ratio FCR from falling through infusions of food relief FR (refer to Figure 1). As Figure 3 shows, population P continues to grow rather than level off as before. The goal of preventing starvation due to a food/population imbalance appears to have been attained. However, the situation depicted in Figure 3 has a major



Equilibrium Reached with no Food Relief

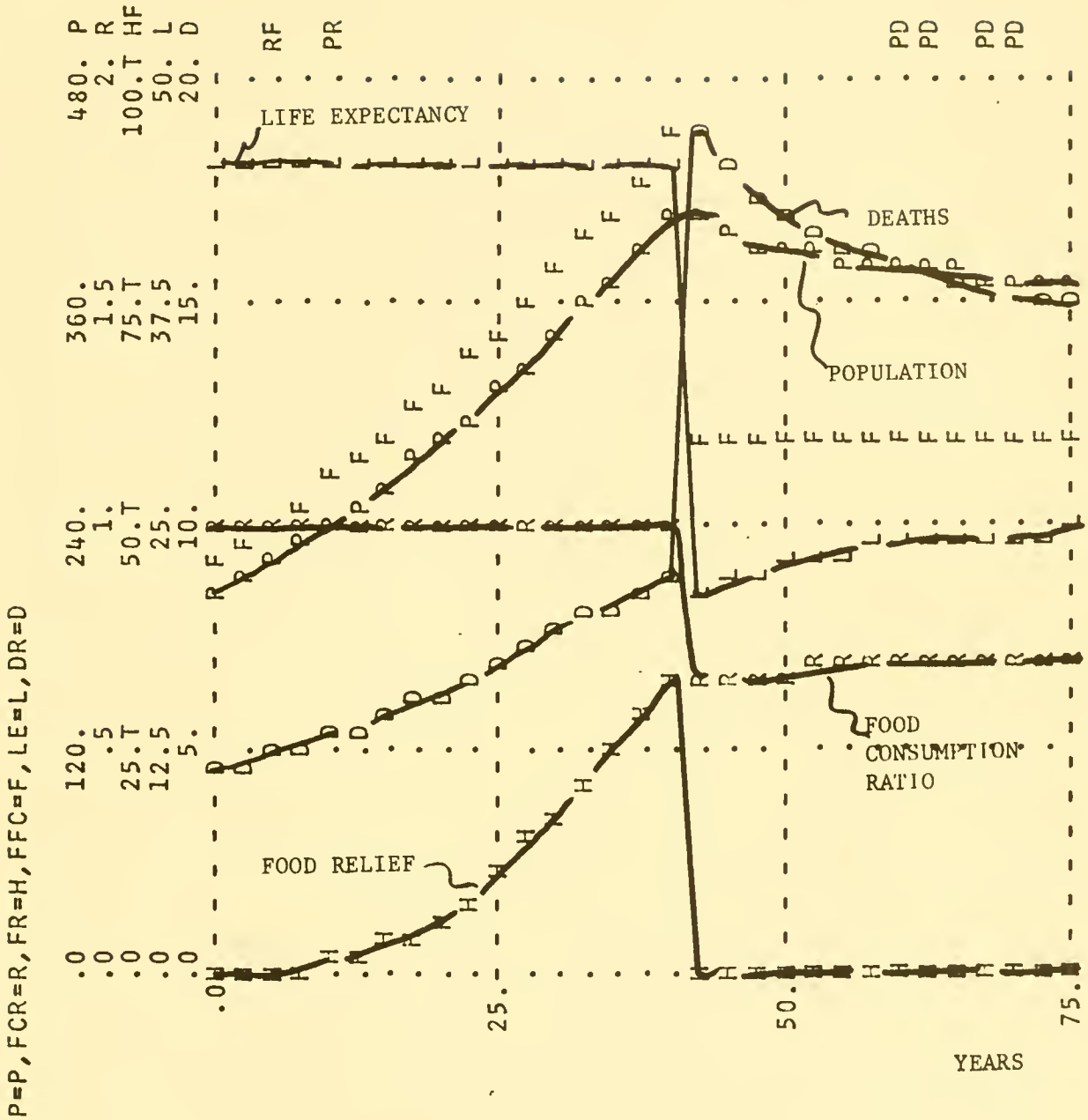
Figure 2



Increasing Food Relief
Figure 3

drawback. The success of the policy depends on ever-increasing food shipments in the future. The greater the number of people sustained by humanitarian relief, the greater the need for more food relief in the future. By the end of the simulation time period, a sizeable fraction of the population in the food-short country is dependent on massive, continued food relief. If for any reason future food is reduced, very many people will be imperiled.

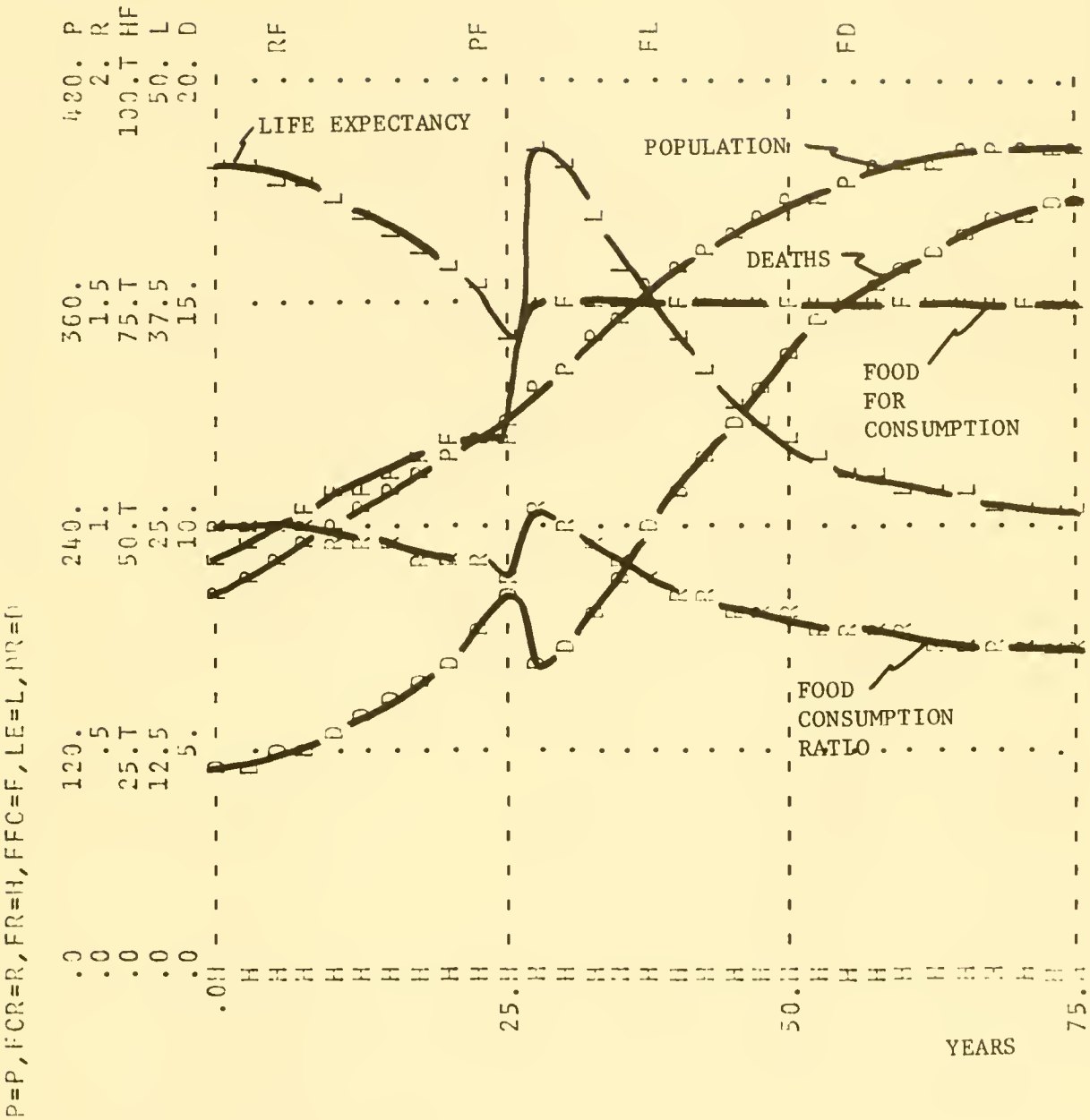
The humanitarian goal of preventing starvation in the short run can lead to dependency in the long run. Relief once begun, cannot be discontinued without disastrous results. In the real world, countries historically blessed with surpluses of food also tend to experience irregularities of production, and consequently reach practical limits to food productivity. Also, economic or political considerations may affect the surplus food available. Assuming disruption of the food supply in food-supplier countries, what are the consequences for dependent food-short countries? In Figure 4, the amount of food relief FR (plotted as H) drops to zero in year 40 as the result of some limit to surplus food availability. Consequently, the amount of food consumed in the food-short countries falls drastically. An immediate severe decrease in life expectancy LE (plotted as L) occurs, causing a drastic increase in deaths. As a result, population peaks and declines about 15% during the remainder of the run. The extent to which this effect would occur in the real world depends on the degree of food dependency at the time of the disruption. A greater degree of food dependency would lead to a sharper decline in population after aid is disrupted. Over the long run, the short-run goal of preventing starvation through food relief has produced greater suffering for a greater number of people. This effect is the potential "evil" in humanitarian food relief.



Increasing Food Relief, Interrupted
Figure 4

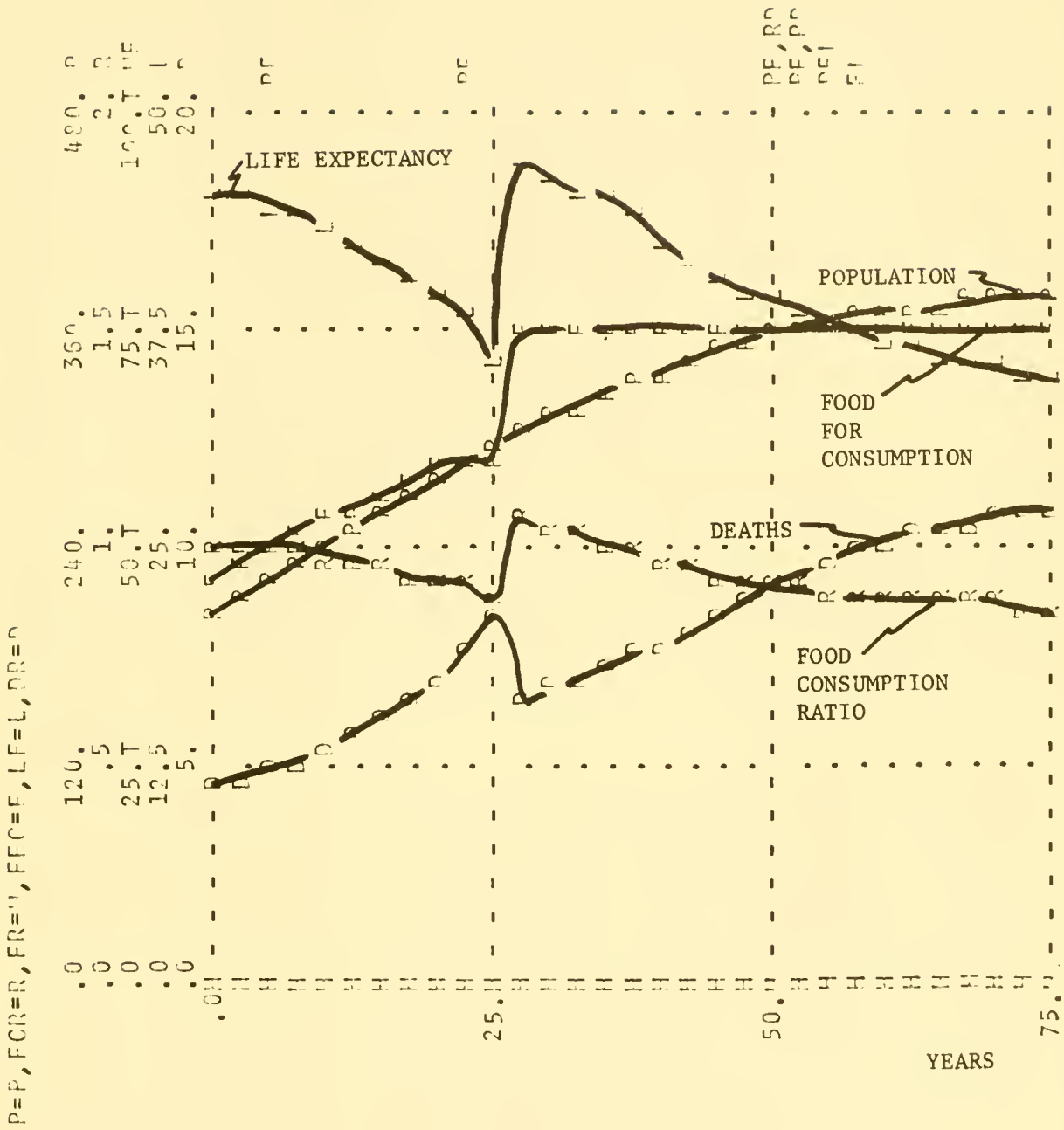
The preceding discussion demonstrates that food-relief programs can lead to long-run harm since the continued flow of food relief is uncertain. Many people with experience in development planning recognize the inherent dangers of programs that provide only food relief, and consider such programs merely as a means of "buying time" until local food production increases. By focusing their efforts on increasing food output in the food-short country, they hope to avoid the pitfalls present in food relief only. Thus they believe their efforts will certainly result in "good" for the food-short country, by increasing the standard of living through higher food consumption per capita. The ethics of this approach are also subject to question, however, as can be seen by examining Figure 5. In that run, rather than providing food relief, the donor country makes available capital and technology to increase food production in the food-short country. This is simulated in the model by increasing the food-from-capital multiplier FPKM by 25% in year 25. After a temporary increase in standard of living due to greater food production, population growth eventually conspires to neutralize the effect of increased local food production. By comparison with Figure 2, it can be seen that the net effect of increasing local food production has been merely to raise the ultimate value of population supported in the recipient country. At the end of the run in Figure 5, the food consumption ratio and life expectancy are the same as in Figure 2. The end result of this supposedly humanitarian undertaking is that more people live at a low standard of living.

The results of Figure 5 underscore the importance of development programs aimed at lowering the birth rate in the aid-receiving country.



Increased Capital to Food Production in Year 25

Figure 5



Combined Birth Control and Increased Capital to Food Production in Year 25

Figure 6

Only by lowering the birth rate can the humanitarian goal of providing a higher standard of living be reached. The effect of lowering the birth rate on the standard of living can be seen in Figure 6. In this run, in addition to increasing capital in food production by 25%, the reference birth rate RBR has been reduced by 25% from 40 to 30 births per thousand population. The effect is immediately apparent upon comparison with Figure 5. As a result of the lower per capita birth rate in Figure 6, the equilibrium population is lower, and the food consumption ratio and life expectancy are higher, all at the same food production level.

The implications of the above two figures are evident: increased local food production has the effect of sustaining a greater number of people at a low standard of living, unless the development program includes the means to lower the per capita birth rate.

Conclusions

The very simple model used in this article has demonstrated the potential evil in humanitarian food-relief programs. Pursuing an aid policy of food relief can place a great number of people in jeopardy due to disruptions in supply. Even when food relief is combined with assistance to increase food production in the recipient countries, the "good" that results may be illusory. In the absence of a reduction in birth rate, the result will merely be to sustain more people at a low standard of living. Only by reducing birth rate can the "good" of an increased standard of living be realized. In this regard, the food-short countries receiving development assistance must recognize their reciprocal responsibility for explicit, effective birth-control programs. A country that expects assistance, while

refusing to recognize its own share of the burden for a long-run solution, should receive no aid at all.

While the need to lower birth rate in the context of increasing local food production is widely recognized, there appears to be an unjustified faith in our ability to accomplish those ends through development assistance. There are several strong reasons for doubting our ability in this area. First, the amount of capital investment required to bring about the needed changes in food production is unknown, but the amount of capital available for allocation to food production is limited due to restraints imposed by energy and natural resource availability, and by pollution production. It is not clear that the industrialization implied by development programs is possible on a sustainable basis. Secondly, the task implied in raising the food-short countries to a high standard of living is perhaps the most complex and difficult one ever undertaken. It is doubtful that we understand well enough the many factors affecting human fertility, the implications of greater global interdependence, and the impact of finite resources to pursue development plans with much confidence either in their ultimate "good" or in their likelihood of success. A truly humanitarian approach would seem to make attempts at increasing our understanding of these issues imperative.

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