Operation Flood: dairy development in India

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Operation Flood (OF) is reputedly the world's largest dairy scheme, and one of India's most successful rural development programmes. Its planning and growth are worth recounting because OF is seen by many as a model deserving replication in the dairy industries of other less developed countries, and in other sectors of the rural economy in India and elsewhere in the Third World.

The roots of OF may be traced back to the last days of the British raj. In 1946 a milk producers' cooperative union was founded in the Kaira District of Gujarat. This was one of India's main dairying areas, although the country has never had a specialist dairy region like Cheshire or the south west of England. The Kaira District Cooperative Milk Producers' Union (KDCMPU) was well organised and soon began regularly supplying milk to Bombay, 425 km away. It was particularly fortunate to have two forceful personalities, T.K. Patel and V. Kurien, who were the driving force behind the expansion of output and the introduction of modern methods of processing and marketing. The essence of the cooperative's success, however, has been the fact that it is owned by the fanners themselves. They feel that it is their organisation and that they have a stake in its future. Although they employ professionals to run the system, producers can participate in decision-making in various ways.

A visit by the Prime Minister, Lai Bahadur Shastri, to the scheme in 1964, convinced him that this was a type of cooperative that worked. The government of India over the years has attempted to stimulate cooperative effort in the countryside, but their good intentions have been frustrated in most states by the vested interests of the local village elites, who have selfishly creamed off the benefits for themselves. The KDCMPU seemed to Mr. Shastri an exception to this rule. He sought to have the structure of the Kaira cooperative reproduced in other parts of India, so that as many farmers as possible could share a new prosperity.

In 1965 the National Dairy Development Board (NDDB) was founded with the specific task of encouraging the formation of producers' cooperatives. Along with those of the Indian Dairy Corporation (IDC) which followed in 1970, its efforts have been dubbed 'Operation Flood', an attempt to boost India's domestic milk production and thereby improve the supply situation in the large urban markets. Traditionally these markets had been controlled by private middlemen, who imported milk from the surrounding countryside, and by urban producers who kept their cows and buffaloes in the residential areas. By 1970 the demand exceeded supply, a gap which was partially met by adulteration with water, whose cleanliness was also very much in doubt. OF planned to circumvent these traders and to establish a new marketing system, with milk supplied by rural producers, organised in Kaira-style cooperatives, to urban processing plants built to hygienic modern standards. At a stroke it was hoped to eliminate the exploitation of rural producers and to improve both the quantity and quality of supply to city consumers: a bold plan indeed.

It is not difficult to imagine the problems faced by this strategy. Quite apart from the local opposition of commercial interests and the power brokers of India's byzantine political machine, there were practical constraints to the plan's execution. Firstly, although India astonishingly has 247 million bovines, their productivity of milk is very low by world

standards. Hitherto a cow's main function has been to bear draught beasts, and little emphasis was put on selective breeding for milk yield. In order to overcome this difficulty, exotic cattle such as Jerseys and Friesians have been imported and cross-bred with local races. Not everyone agrees that this policy is appropriate. Some cross-bred cows have had difficulty adapting to the climate, and male offspring are not suitable for draught work. Fifteen per cent of milch animals had been upgraded by 1984.

A related problem is that of fodder. One of the reasons for low milk yields is that animals have traditionally been fed on crop residues. Very little land is devoted to grass or other fodder crops, a policy which is very understandable given the Indian farmer's chief concern with producing grains for human consumption. The KDCMPU has made provision for this by selling concentrated cattle feed made to a balanced and nutritious formula to its members. It is hoped to follow this example in other parts of the country.

A third constraint is the mismatch between demand for liquid milk, which is fairly constant throughout the year, and the supply, which tends to be seasonal. To bridge this gap it is necessary to store part of the surplus production of the flush season to help with the deficit of the lean season. At first commercial imports of milk powder were seen as the answer. This stores well for several months and can be reconstituted by adding water. Later the food mountains of the EEC were called upon in what has been called 'the intelligent use of food aid'. The EEC was pleased to be rid of its embarrassing surplus, and the Indians were equally satisfied to receive shipments of skim-milk powder (SMP) and butter oil. The SMP was sold as recombined milk in the open market, and the funds generated have been used by the NDDB/IDC for the financing of OF. Gradually this overseas aid is being phased out and replaced by domestic SMP, but it was very useful for priming the pump. OF aims eventually to be self-sufficient in milk production and in internally generated funds for future dairy development.

Organisation of the ambitious plans of OF would have proved beyond the means of most governments in the Third World. The NDDB, the sole authority since 1987, is a quasi-governmental organisation, but it eschews politial interference at any level, and relies upon its own staff of well-trained, dedicated and highly motivated administrators. Their task is to inspire local farmers to set up village producers' cooperatives affiliated to a district union along Kaira lines. Each state participating in OF also has a milk producers' federation which coordinates the supply system. Once this hierarchical network is established, the NDDB's job is done and the day-to-day organisation is left to the farmers and the officials they employ. The NDDB also offers a service of technical advice in the construction of modern dairy plants for the processing of milk and manufacture of dairy products.

OF falls into three phases (Fig. 1). OF I (1970-81) aimed to establish links between eighteen of the top milk-producing regions and the four metropolitan centres of Delhi, Bombay, Calcutta and Madras. Essentially it was a marketing exercise designed to prove the viability of an integrated approach to planning urban milk supply systems. Achievements include the establishment of a 'National Milk Grid'. This is a geographical policy which ensures the balancing of supply and demand across the boundaries of metropolitan milksheds by transferring milk from areas of surplus to areas of deficit. The National Milk Grid will help to bind together the interests of producers and consumers in distant parts of the country. Gujarat, for instance, sends some milk by rail to Calcutta, 2000 km away.

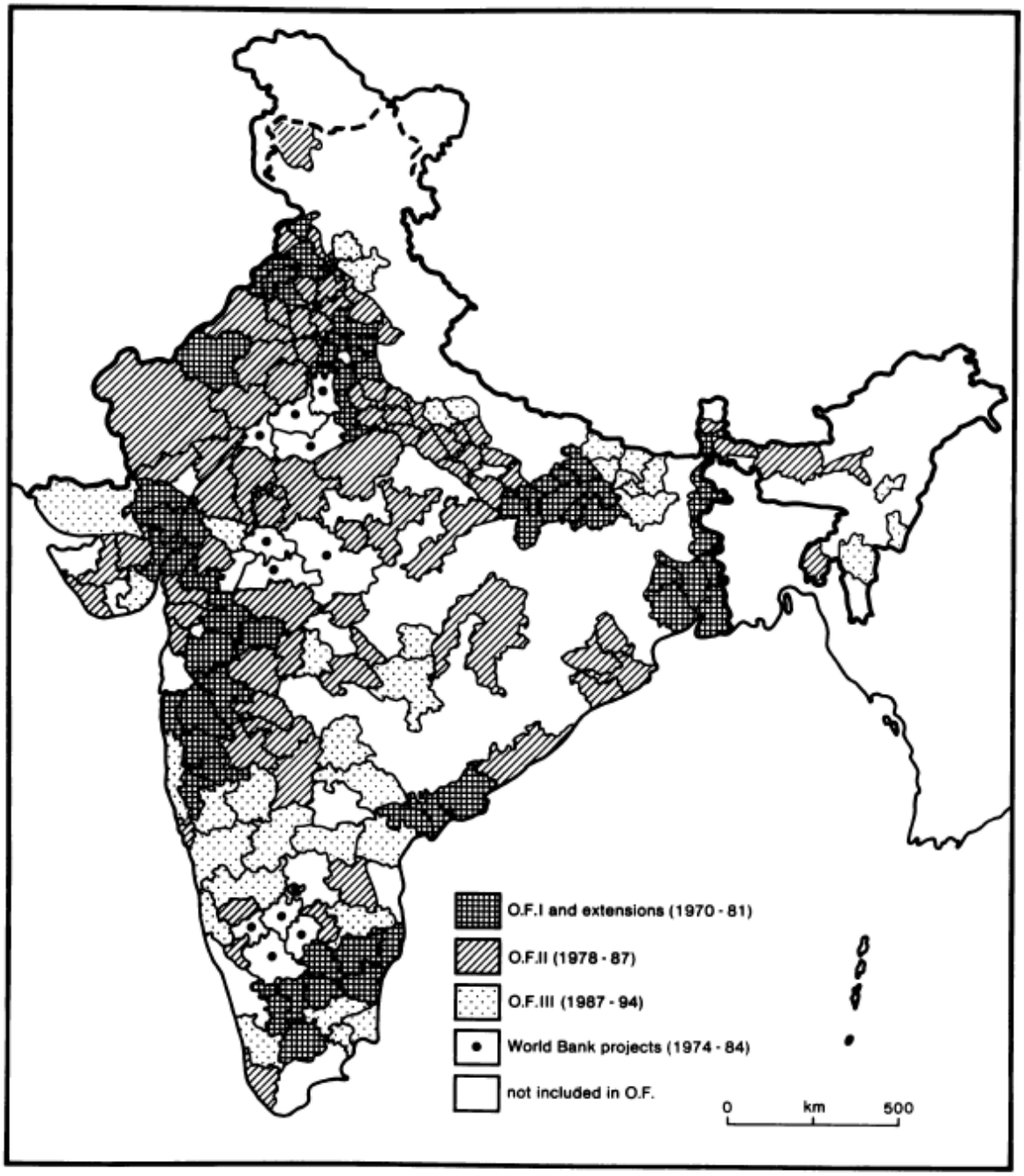

Fig. 1 — OF: the geographical distribution of the three phases.

OF II (1978-87) sought to spread dairy cooperatives to a wider area of the country, by enrolling 10 million producer families, and to improve the milk supply of 150 cities each with a population of over 1 million. In summary this was the diffusion and mass adoption phase of the 'package' offered by OF. Not surprisingly, given the optimistic targets set, there were problems in achieving these goals in the short time available By late 1988, 5.9 million producers had joined 38,000 cooperative societies, and procurement was running at an annual average of about 8 million litres per day. This represents a fifteen-fold increase in milk supply to OF since 1970.

OF III (1987-1994) is planned as a phase of consolidation, aiming to accomplish the unfulfilled targets of OF II and to extend the cooperative sector to a total of 70,000 dairy

societies, with 15 million milk animals. By 1994 it is hoped to cover 176 milk sheds and to supply 13 million litres per day to about 450 towns and cities.

OF has been criticised, especially by observers within India. It is suggested, for instance, that the scheme is helping rich farmers to supply milk to rich urban consumers and does nothing to alleviate poverty. It is true that few really poor people in India can afford to buy much milk, which anyway in relative terms is nutritionally not such good value for money as grains like rice, wheat and millets. Milk is, however, an important part of India's food culture and a majority of the population consume some dairy products. The quantities involved are small but any improvement to the reliable supply of a clean and unadulterated milk is welcome. OF's marketing strategy includes the sale of cheap milk in urban slums.

OF clearly has engaged the interest of poor people. In 1984 72 per cent of its farmer participants were either landless or operated less than 5 hectares of land. Of these a substantial number were also from the scheduled castes and tribes.

Another criticism relates to the application of Western technology to the traditional Indian dairy industry. Introducing new genetic strains of cattle is one example of this. Another is the construction of modern dairies for cooling and pasteurising rural milk and manufacturing some of it into SMP, butter, ghee, and other products. These plants, it is said, are excessively capital-intensive and under-utilised. The latter point is exaggerated and the former can be countered by the argument that any technology is 'appropriate' which achieves its goal without undesirable side effects. These dairies may be responsible for some unemployment in the informal rural ghee manufacturing sector, but they are creating additional wealth for poor rural producers and have begun to satisfy the latent demand of urban consumers. Traditional marketing methods had failed on both counts.

OF fits the current planning ideology of India quite well. Firstly, it applies technology to the problems of rural poverty in the hope of achieving a fast solution. Secondly, it uses a 'package' approach of predetermined elements which are assumed to be replicable throughout suitable regions. Both of these elements have obvious weaknesses which together may one day place an upper limit on the project's success. For the foreseeable future, however, OF remains India's most encouraging large-scale wealth generating rural development programme. The most worrying issue is that the country has no other equivalent scheme which can be said to be either so well organised or such good value for money.