

FOOD AND WATER AS IF POOR PEOPLE MATTERED:

A PROFESSIONAL REVOLUTION

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CONTENTS

	Page
ABSTRACT	1
THE CASE FOR PROFESSIONAL HUMILITY	3
NORMAL PROFESSIONALISM	8
THE REVOLUTION: PUTTING POOR CLIENTS FIRST	11
IRRIGATION AS IF POOR PEOPLE MATTERED	15
Canal Irrigation	17
i. redistributing water from heads to tails	17
ii. raising intensities	17
iii. progressive entitlements to water	18
iv. predictability and low hassle	18
v. land acquisition and allocation	19
Groundwater	19
i. small-scale pumps	20
ii. rights to water	21
iii. managing the groundwater market	22
iv. Trees as poor people's solar pumps	24
OTHER RESOURCES AS IF POOR PEOPLE MATTERED	25
CONCLUSION	27
REFERENCES	29

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ABSTRACT

Hunger is an extreme sign of deprivation. Failures to eliminate hunger, and past errors of belief, are reason for humility and reappraisal. Hunger in the modern world is a problem not of production but of poverty, not of the total food available but of who produces it and who can command it. Normal professionalism is also part of the problem. To alleviate deprivation and hunger, professionals need to learn from and with those who are last - the poor - and to put their priorities first, including livelihoods and personal food security.

Irrigation's benefits to the land-poor - the landless and those with little land - are easily underestimated. They can include higher production, employment on more days, higher daily wages, less need to migrate, and reduced risks. From canal irrigation benefits to the land-poor can be realised through redistribution of canal water; sliding scales of water entitlements; raising cropping intensities; more predictability and less hassle in water supply; and equitable land distribution. From groundwater, benefits to the land-poor can

water; public policy with power tariffs, spacing wells and tubewells; and trees as poor people's solar pumps. Last-first approaches can also be applied to drinking water, water for pastoralism, common property land, watershed development, energy, and agricultural research. Normal professionalism points away from these opportunities; to realise them, and enable the poor to overcome hunger and deprivation, demands a new professionalism which puts the last first.

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THE CASE FOR PROFESSIONAL HUMILITY

In his Nairobi speech on September 1973 Robert McNamara expressed a major shift which had been taking place in development thinking. He focussed on the poverty of people in the developing world, and especially on what he termed absolute poverty, a condition of life marked by disease, illiteracy, malnutrition and squalor, and so degrading as to insult human dignity. He asked:

'And are not we who tolerate such poverty, when it is within our power to reduce the number afflicted by it, failing to fulfill the fundamental obligations accepted by civilized men since the beginning of time?'

(McNamara 1973:6-7)

His question is with us still, and if his syntax today sounds dated in its male bias, that serves to emphasise that it was twelve years ago when he asked it and brought anti-poverty policies firmly to the fore.

The record of those twelve years is sobering and humbling. There have been successes. Life expectancy and literacy rates in most countries of the third world have risen. Irrigated areas have extended. Bangladesh in 1984 averted a famine when faced with

conditions similar to those which had caused terrible suffering ten years earlier. And the list could be extended. But the shameful fact remains that there are some 750 million people still trapped in absolute poverty. At the World Food Conference in 1974 Henry Kissinger looked forward to a world in ten years time when no one would go to bed hungry. But after those 10 years we have one of the worst famines in history, with millions dying in Sub-Saharan Africa while vast grain surpluses lie in store in the rich world. C.P. Snow's speculation 20 years ago was closer - that by 1984 we might be watching the world dying from starvation on our television screens. Such are the wonders of modern technology and the failures of human will that we do indeed now see children dying of hunger in our living rooms and yet still fail to enable the deprived to avoid such outrageous suffering.

Many dimensions of deprivation are discomfoting. We often do not wish to look squarely at the truth, at the dependence of wealth on poverty and exploitation at unequal exchange between rich nations and poor, at transfer payments by transnational corporations, at obligations of low-incomes nations to repay debts in strong dollars, and so on. There is also an easy temptation to treat deprivation as if it were only 'hunger'. Thus in a recent speech (Clausen 1985) the President of the World Bank defined absolute poverty as meaning that 'people are too poor to obtain a calorie-adequate diet'. Such hunger is the bottom line, an extreme deprivation, and points to those most in need. But overcoming deprivation entails much more, including access to

5

basic services, and to basic goods such as matches, salt, soap, clothes, nails, thread, batteries and so on which are no longer available in many parts of rural Sub-Saharan Africa (Chambers 1985a). Food and water are among the least threatening and most easily accepted aspects of deprivation for elites to examine. But as we shall see, when poor people are put first, comfortable and conventional professionalism is challenged even by food and water.

The case for professional humility rests not only on failures of action but also on past errors of belief. At the level of general theory, trickle-down can now be seen as a naive wish fulfilment. At the technical level, too, there have been astonishing errors and ignorance. For many years, post-harvest losses at the village level were believed to be of the order of 30 per cent, and special institutions, university courses, and research programmes were set up to tackle this enormous waste. Yet as meticulous research began to be done at the village level, it emerged that farmers were not so foolish or incompetent, and that losses were lower, typically in the range of 5 to 8 per cent (Greeley 1982; Greeley ed. 1982; Lipton 1982). Another technical field still in disarray is human nutrition, with continuing uncertainty about the human nutritional requirements. Perhaps the grossest error has been the view, gratifying to professionals and elites generally, that the poor are ignorant, lazy, and conservative. Some of the most important lessons of the past

decade have been that it is less the poor who are ignorant, lazy, and conservative than professionals; that we are part of the problem.

Concerning food, the biggest error has been to see hunger as a problem of total production. For a long time it seemed commonsense that world hunger resulted from a shortage of food, so that producing more food would banish world hunger. This view cannot be sustained. World food supplies have been rising faster than population. Huge grain surpluses are stored in the rich world. The problem is that low income countries cannot afford to buy them. Even more, poor people within those countries do not command or cannot afford to buy the food they need. Hunger is not a problem of total production; it is a problem of poverty of nations and especially of people.

Striking illustration of this truth for people is to be found in Amartya Sen's book Poverty and Famines (1981). He analyses four major famines to show that starvation resulted from a loss of food entitlements - the ability to command food, whether through producing, earning, purchasing, or receiving it. The Great Bengal famine of 1943-4 in which perhaps three million people died, came after a fairly normal period in terms of food availability. Officials were right in saying that there was no serious shortage of food. People died because of sudden loss of earnings, high inflation, hoarding, and official bungling which meant that they could not command food although it was there.

Deprivation and hunger will not be overcome by increasing production in the rich world: that may even perversely inhibit production in low-income countries and make things worse.

Deprivation and hunger will be overcome by enabling the deprived to grow the food themselves, or to earn it, or to command it in other ways. Increasingly, this has been recognised and emphasised by scientists. M.S. Swaminathan (n.d.:45) in an article entitled 'Our Greatest Challenge: Feeding a Hungry World' has advocated 'Social security to provide the needed purchasing power to the urban and rural poor through greater opportunities for gainful employment' as a component of a national food security system. Norman Borlaug (n.d.:135) has written that 'The chief impediment to equitable food distribution is poverty - lack of purchasing power...'. But the danger remains that the main perceived professional frontiers of biotechnology, gene-splicing and the like will, as they work themselves through in history, serve the rich not the poor, increasing production in the wrong places and for the wrong people, even if this is not what enlightened scientists intend.

The challenge, as the President of the World Bank put it in 1985 is 'to generate growth among low-income countries and low-income people within countries' (Clausen 1985:7 - my emphases). To do this, scientists and engineers have daunting power because their decisions have such vast, if distant, ramifications. In one of his songs Tom Lehrer had a well-known rocket scientist saying

'When the rockets go up, who cares where they come down.

That's not my department, says Werner von Braun'.

Where the "rockets" come down is everyone's department. Technologies developed in laboratories, workshops and on research stations, can have massive impacts, for better or for worse, on the distant rural poor; and those whose choices and actions develop them have causal and moral responsibility for these impacts.

NORMAL PROFESSIONALISM

Part of the problem is normal professionalism. We are trained and trapped in cores of knowledge, and our location, conditioning, preferences, and career incentives point us inward and upward towards greater "sophistication" instead of outward and downward towards the peripheries of knowledge, and especially the knowledge of the rural poor. 'First' thinking, as it can be termed (Chambers 1985) is powerfully pointed towards whatever is capital-intensive, mechanical, chemical and quantifiable and away from whatever is labour-intensive, powered by animals or people, organic and difficult to quantify; away, that is, from the resources and techniques of the rural poor. Industrial, commercial and large-farmer interests add their pull in directions scientists and engineers are anyway inclined to go.

Nor are these 'first' biases all. Most normal professionalism deals with resources not people. The point of entry, debate and analysis is usually technical. Choices in research and

development are influenced by the latest high technology, skills, techniques, tools and instruments, and by the priorities of peers and funding agencies, often commercial. Disciplines and professions specialise and tend to dig down into ruts, and to respond to challenges with reflexes which fit their specialisations. Normal professionals, more than they realise, are trapped, blinkered and biased in their view of reality. Above all, they see the world from the core, where they are, and not from the periphery where the deprived and hungry are.

Four bad effects follow.

First, technologies generated in 'first' conditions do not fit the needs and resources of those who are last. The cry is repeated for the transfer of technology, but a transfer-of-technology mentality is part of the problem. It is gratifying to believe that we have the knowlege, and they do not, and that they must be educated (in farming practices, in water management, and so on). But the ignorance is all too often that of the professionals. The transfer-of-technology paradigm (Chambers and Ghildyal 1985) generates technologies which do not fit the conditions of the resource-poor, who then do not adopt them, not because they are ignorant but because they are rational.

Second, the poor are a residual. Resources come before people, but then among people, the less poor come first, and the poorer last. So we have Chapter One - General Background, Chapter Two -

Soils, Chapter Three on Hydrology, and then the token postscripts, Chapter Twelve - Sociological Constraints, and Chapter Thirteen - Impact on Women.

Third, disciplines and professions leave gaps. A tempting view is that if all known and relevant disciplines are applied to a problem, every important aspect will be covered. With normal professionalism, that view is false. Canal irrigation provides an illustration. Sociologists, with few exceptions, have studied the village-level, and what happens among farmers below the outlet (the official water handover point between irrigation staff and groups of farmers). Engineers have concentrated on design, construction and maintenance, the physical hardware dimensions of canal irrigation. Normal professionals, both sociologists and engineers, have in consequence neglected the operation of the main irrigation system, the allocation, scheduling and distribution of water on the canals down to the outlets, and communications and controls. In textbooks used in professional training of canal irrigation system managers, these crucial subjects are scarcely even mentioned.

Fourth, normal professionalism lacks the imagination to see that apparently technical decisions are normative. What scientists decide to do affects who gains and who loses in society. There are no neutral decisions. But to see the implications of decisions requires imagination to think through causal chains to those who may be affected, and especially the poorer of the peripheries.

Normal professionalism is thus not just imperfect. It operates blindly, from the top down, from the centre-outwards, with able and intelligent people seeing little more than their own parts of the system, cogs in the machine, not recognising where they are going or the effects of their actions and non-actions. Whether they harm or help the peripheral poor is then largely coincidental.

THE REVOLUTION: PUTTING POOR CLIENTS FIRST

A clue to the change needed can be found in Peters and Waterman's (1982) study of lessons from America's best-run companies. They quote (p.156) Lew Young, Editor-in-Chief of Business Week as saying:

'Probably the most important management fundamental that is being ignored today is staying close to the customer to satisfy his needs and anticipate his wants. In too many companies, the customer has become a bloody nuisance whose unpredictable behaviour damages carefully made strategic plans, whose activities mess up computer operations, and who stubbornly insists that purchased products should work'.

The authors find that the excellent companies are driven more by their direct orientation to their customers than by technology, and in summary say that what their research uncovered on the

customer attribute was that 'the excellent companies really are close to their customers. That's it. Other companies talk about it; the excellent companies do it' (ibid 156-7 their emphases).

For companies, there are practical commercial reasons for putting clients first. Being close to them pays. With the rural poor the problem is different. They cannot exercise demand. They are precisely those who are most powerless, most scattered, most unable to articulate their needs, most unable to make demands on the system. They are, moreover, easily despised and rejected as ignorant and not knowing what is best for them. Neither commercial forces nor inclination draw normal professionals to learning from them and identifying their priorities. To serve them is largely a personal and moral question. Robert McNamara recognised that

'The fundamental case for development assistance is the moral one. The whole of human history has recognized the principle - at least in the abstract - that the rich and the powerful have a moral obligation to assist the poor and the weak'

(1973:8)

The problem is to make this abstract principle concrete. At issue is a moral choice, of a personal professional revolution to put poor clients first.

This revolution leads to a new professionalism. It entails 'flips' or reversals, taking hold of the other end of the stick,

seeing things the other way round, from the point of view of poor clients, their priorities, their resources, their skills, and their knowledge. The effect is like taking a globe of the world and turning it upside down, or standing on one's head. Everything looks different. Criteria and agenda are new.

Three practical implications stand out.

First, a key to the revolution is a sustained effort to learn from and with poorer clients. Research, especially over the past ten years, has shown the richness and validity of much indigenous technical knowlege (IDS 1979: Brokensha et al. eds. 1980; Chambers 1983: 75-102; Richards 1985). Modern scientific knowlege is so linked with power and prestige, that to learn from the poor requires a major role reversal from teaching and transferring technology to sitting down to listen and learn.

The second implication is to put the priorities of the poorer first. The temptation is to know what is best for others. For me to say now what the priorities of poorer people are, or may often be, is itself arrogant, and there is no substitute for asking them, again and again; but interim guesses are that their deprivations are multiple - not just poverty, but also physical weakness, isolation, vulnerability and powerlessness; and that their priorities include livelihoods in the sense of adequate and secure stocks and flows of food and income, and reserves against contingencies. For this, access to and command over productive resources which give a degree of independence seem often what

they want, together with assets for security against disasters and sudden large needs.

The third implication is for decisions by professionals on where to work, what to work on, what to seek funds for, or what to put in the syllabus. Many professionals have made reversals and decided to work on what matters to those who are last: root crops for famine reserves, pest and disease resistance to avoid purchase of chemicals, irrigation management to benefit smaller farmers and tailenders, agroforestry for improved traditional agriculture, and so on. But the great majority of professionals have not. The touchstone is for all to ask of their work: who will gain? Who will lose? And how could the poorer lose less and gain more?

If putting the last first in this way appears the starry-eyed evangelism of a jet-lagged English academic, let us test it against practical potentials, taking first, canal irrigation, and second, groundwater and other small sources of water for irrigation.

IRRIGATION AS IF POOR PEOPLE MATTERED

Irrigation is usually seen as a means to production. Let us instead look at it as a means to enable the poorer to gain more secure and adequate livelihoods. For them, the importance of irrigation is not the volume of production that results, but the amount and stability of the food and income they can obtain. Silliman and Lenton (1985) in their study of 'Irrigation and the Land-Poor', define the land-poor to include those who own no land, those who operate no land, and those whose major source of income is agricultural wage employment, and note that this extended definition includes many small and marginal farmers. They find that although their subject has been neglected in research, there is considerable evidence of strongly positive employment and income effects from irrigation, much stronger than with high-yielding varieties. The benefits can take many forms: higher incomes for land-poor farmers; higher wages for labourers from higher demand, and from the higher incomes of farmers, which enable them to pay their labourers more; work on more days of the year, and especially work during a second or third season when previously there was none; reduced need to migrate seasonally to seek work elsewhere, avoiding the disruptions and insecurities involved and giving a better chance to educate children; and in-migration to irrigated areas with direct benefits to the in-migrants and indirect benefits to labourers who stay behind because of less competition for work. Other potential benefits can be conjectured such as reduced vulnerability to

indebtedness and impoverishment, and reduced dependence on patrons because incomes are higher and better spread round the year.

Such points can be confirmed by going direct to "last" people, such as labourers on the tailends of canal irrigation systems. Women labourers on the tailend of the Kaudulla Project in Sri Lanka benefitted from more work when additional supplies came to their Project through the Mahaweli Scheme. In a Tamil Nadu village in India, Harijan women, asked how they felt about electric light recently installed in their huts by a Government programme, replied not praising the light, but complaining that unreliable power supplies to their employers' irrigation pumps restricted their work and incomes as labourers.

The priorities of the land-poor with irrigation are likely, in short, to be for adequate, stable, predictable and timely water supplies, both to generate employment and to enable those with some land to command and use the water.

From this perspective, let us now examine first, canal irrigation, and second, groundwater.

Canal Irrigation

Many large and medium irrigation systems in South and Southeast Asia operate far below their potential for generating employment and incomes for the poor. The deprived on canal irrigation are often labourers, marginal and small farmers, and tailenders. Better water supplies for tailend farmers helps both them and labourers on their land.

Five priorities can be suggested.

i. redistributing water from heads to tails.

Each irrigation system is unique, but on many, permissive issues in headreaches create conditions of waterlogging which depress yields while tailends are deprived of adequate, timely and predictable supplies. The potential here is for redistribution of water so that all gain from more appropriate, adequate, timely and predictable water supplies. At headreaches this might sometimes mean a shift to more employment-intensive higher value non-paddy crops, and at the tails more employment because of a better water supply.

ii. raising intensities

Combinations of reservoir management, water-saving responses to rainfall, reduction or improvement of irrigation at night, improved communications, and decision-making with farmers, can be used to save water

and increase intensities from one to two, or from two to three crops a year (Chambers 1984). Among other benefits, increased intensities can be expected to reduce out-migration, increase in-migration, and raise incomes of the land-poor.

iii. progressive entitlements to water

As on the West Banas Project in Rajasthan, water entitlements can be determined on a progressive basis, with per hectare entitlements decreasing with land size. Besides increasing the productivity of water, this is likely to increase the livelihood-intensity of its use. Such rights are least difficult to establish before the start of a project.

iv. predictability and low hassle.

For small and marginal farmers predictability and low hassle in gaining access to water are highly valued. On the Mahi-Kadana Project in Gujarat in India, researchers (Jayaraman et al:1983) have reported farmers paying between 7 and 9 times as much for groundwater as for canal water: the groundwater is relatively reliable and the canal water has to be obtained through a complex and unreliable bureaucratic process. A complex of questions concerning information, power, control, rights and trust (Wade 1985) is involved here, with the presumption that high predictability and low hassle in the supply of land irrigation water will encourage farmers to irrigate more

and generate more employment.

v. land acquisition and allocation.

Countries differ in whether new canal systems supply water to farmers on their existing land, or whether the land is acquired and redistributed. Acquisition and redistribution are common in Africa, for example as on the Mwea Irrigation Settlement in Kenya, and in the Dry Zone of Sri Lanka, but rare in India, one case being the Rajasthan Canal. The potential for the settlement of landless families on land secured by enforcing land ceilings, or from land acquisition or purchase by government when irrigation is provided, would seem very large in India and elsewhere.

Groundwater

Groundwater which is not fully exploited can be seen as a last frontier (IDS 1980b), raising the question of who will get it, and who will benefit and who lose out from its development. In India the unexploited potential is still vast: estimates of the renewable recharge of groundwater roughly doubled between 1969 and 1983 (Sinha 1983), and by 1984 the current official estimate was that 33 per cent (probably a substantial underestimate) was still unexploited. Much unused groundwater potential in the lower Gangetic basin, in both India and

Bangladesh, coexisting with the greatest concentration in numbers, density and desperation of poor people in the world. The normal pattern of groundwater development is spotty. Scattered larger farmers buy pumps and irrigate, and public tubewells are installed. Spots or islands of irrigation then appear leaving between them unirrigated areas with many of the poorer farmers. Sometimes the cone of depression (the conical depression in the watertable caused by pumping) lowers water in neighbours' wells so that they find irrigation harder, costlier, or impossible. Many other inequities have been documented with both public and private wells and tubewells.

Some of the poorer gain work and wages from this pattern of development, but they stand to gain much more from more targetted approaches. Of these, four can be outlined.

i. small-scale pumps.

In India and Bangladesh, and perhaps elsewhere, there is a curious gap in the pumps available on the market. At the lower end there is human and animal lift, but then little or nothing less than 3 HP or 5 HP pumps. This gap coincides with the needs of tens of millions of small farmers whose land lies above accessible groundwater, and for whom a 3 or 5 HP pump may be too large, unless they sell water to neighbours. Many possibilities can be examined - solar (McGowan 1985), pumps powered by batteries which are taken home at night and charged (Joshi 1984), and decentralised electric systems based on producer gas (Joshi et al 1983). There would appear to be a

commercial opportunity here, requiring imaginative R and D close to the clients.

ii. rights to water.

Rights to water are often proportional to land, and limited to those with land. Recent innovations have shown that more equitable approaches can work. Three (for which see also Silliman and Lenton 1985) deserve mention.

First, the Gram Gourav Pratisthan near Pune in India is a voluntary agency which has helped form groups of farm families for lift irrigation where water is scarcer than land. Water rights are allocated according to numbers of members of the family. This is subject to the payment of a contribution per head and the family having the necessary land. The allocation is half an acre per person subscribed at the time of starting (Morehouse 1981; GGP 1983). 34 groups were operating in March 1985, and other voluntary agencies were taking up the approach.

Second, Proshika in Bangladesh, as well as other organisations, had by 1984 enabled over one hundred groups of landless to acquire low lift pumps for extracting water from common water sources for sale to farmers. Other organisations were doing likewise in Bangladesh, and groups often sell both water and their labour on a sharecropping basis. Though landless, they are thus enabled to gain from the underexploited common resource of water (Ahmed 1983; Wood 1984). Other organisations were doing likewise in Bangladesh, and there was interest in

this approach also in India.

The third example concerns not groundwater but small dams. Sukhomajri and Nada are villages near Chandigarh in North India where the water in very small dams built for erosion control has been allocated equally to all families (hearths) in the village. This includes the landless, who can sell their water, or use it in share cropping arrangements (SPWD 1984). This may be replicated on the Adhikola Project in Nepal, as well as elsewhere in India.

All three approaches are small-scale but spreading. All allocate water more equitably than the more common system of water to the strongest. All have a higher livelihood-intensity of scarce water use than would otherwise be achieved.

iii. managing the groundwater market

Although they are amenable to policy interventions, markets for groundwater have been neglected. They present two types of opportunity.

a. saturation. Where groundwater recharge is very good, as in much of the Gangetic basin, one approach to benefit the land-poor is to install pumping overcapacity. This creates a water-buyers' market. In parts of Gonda District in Uttar Pradesh land is fragmented and the same farmers may be sellers of water on some plots and buyers on others. Tubes are cheap, and more numerous than the diesel pumpsets which are hired and

moved around. In such conditions, small poor farmers are in a strong position. They can purchase a secure and adequate supply of water for irrigation from their neighbours even though they may not own capital equipment or even tubes (Chambers and Joshi 1983). "Saturation" in such areas appears a feasible policy. It could be introduced through camps of administrative, banking and technical staff who could install overcapacity village by village, and so generate a water buyers' market for small farmers, and also a sellers' market for labourers because of increased demand for labour.

b. pricing, spacing and public tubewell policy. In a recent study, (Shah 1985), Tushaar Shah of the Institute of Rural Management at Anand has noted and investigated anomalies in the groundwater market in India, a subject which had largely escaped notice. He contrasts high rates of 15 to 35 rupees per hour in Gujarat with much lower rates of 4 to 8 rupees per hour in Punjab and Uttar Pradesh. The contrast is attributed to three factors. First, Punjab and Uttar Pradesh have a flat rate charge per horsepower per annum whereas in Gujarat the charge is based on units of power consumed. In consequence, the marginal cost of water to the seller is relatively high in Gujarat, while negligible in Punjab and Uttar Pradesh. Second, tubewell spacing policy in Gujarat gives a farmer with a tubewell a monopoly over some 500 acres within which buyers of water lack alternative sources which might keep prices down. Third, public tubewells in Gujarat are so scattered and few that they do not compete effectively with private tubewells to keep

the price of water down. High prices for water in Gujarat discriminate against small and poor farmers. Shah concludes that quite straightforward changes in government policies for power pricing, spacing and public tubewells could transform groundwater markets in Gujarat into powerful instruments for small farmer development.

iv. Trees as poor people's solar pumps

Trees with irrigation is a gap subject which has fallen between the slots of disciplines and professions. Foresters are concerned with trees in forests not on farms; and irrigation is usually thought of in terms of crops. Where water tables are high, however, trees can be poor people's solar pumps. They require planting, protecting, and cropping or cutting; but they do not require poor and weak farmers to obtain credit and hardware for pumping, thus sidestepping much exploitative hassle. In the Gangetic basin and similar areas, trees could be a buffer against indebtedness for many poor people: to meet contingencies they can be cut and sold. In Egypt, fodder trees might provide an alternative or supplement to berseem as an animal fodder: if the trees were more productive than berseem, they might release land for food and other crops. In any case, trees are a cheap and renewable means for the poor to tap groundwater.

OTHER RESOURCES AS IF POOR PEOPLE MATTERED

Similar approaches, starting with the priorities and needs of the poor, can be applied to other resources and developments. The same questions of who has access, who gains and who loses, and how the poorer can lose less and gain more, can be asked with each of the following:

drinking water, including ease and equity of access, quality, and maintainability

water for livestock, including questions of

location, density, technology, ownership and control of water supplies (Sandford 1983, 1985)

appropriation of land through appropriation of water. On the fringes of the Sahel, as also in Botswana, right to install a water supply gives de facto control over land, usually by the better-off members of society. The appropriation of these two common resources - water and land, is seen as development. One can reflect, though, on the jingle written at the time of the enclosure of common lands in England

'They clap in gaol the man or woman
Who steals the goose from off the common;
But let the bigger knave go loose
Who steals the common from the goose.'

For those who appropriate water and land are denying to others what was before a common resource.

water falling in watersheds, where contour ploughing, tie-ridging, grassing waterways, agroforestry, and other measures may enable disadvantaged rainfed farmers to retain more water

energy, which has been regarded as a problem for the rich rather than an opportunity for the poor.

Livelihood-intensive use of producer gas locomotion (Foley and Barnard 1983) in remote wooded or bushed areas could both save foreign exchange, where oil is imported, and generate incomes for the poor who could bring wood to the roadside to sell as fuel to passing vehicles.

agricultural research methodology, where a case has been argued (Chambers and Ghildyal 1985) that a new paradigm is needed for research to serve resource-poor farmers.

In each of these cases, as with canal irrigation and groundwater for irrigation, starting with the poorer people and putting their priorities first presents criteria and agenda which lead to new ideas of what should be done.

CONCLUSION

In alleviating deprivation and world hunger, normal professionalism is not only not enough; it can point in the wrong directions. While there is a world food surplus, any scientist who devotes his or her life successfully to increasing food production in the rich world may have a net effect of making things worse for the poor since low world food prices encourage imports by low-income countries and inhibit domestic production and income-generation. Normal professionalism also starts with problems which are physical and scientific, and with resources rather than people, let alone those who are deprived. The distant poor are the final residual in any analysis of implications, if indeed they are reached at all. Professions concerned with water have special problems. The inherent difficulties of water as a substance to manage and measure make them narrow their focus more than others. In consequence, and more than others, water-related professionals may overlook social implications of technical decisions and activities. Yet because water can do so much to reduce deprivation, their actions matter much, for better or for worse, for the deprived and hungry.

The argument for a professional revolution is both moral and practical. It is the deprived who are hungry and their hunger will be overcome to the extent that they become less poor. Professional reversals, to put people before resources, and the poorest first of all, generate new agenda for water policy and

research. Priority for livelihoods for the deprived demands a flip of perception, and then presents the excitement and intellectual challenge of a new paradigm to elaborate and explore. Above all, it holds out better hope of reducing deprivation and hunger in the world. The question is whether enough professionals will have the vision and courage for the quiet personal revolutions which are needed.

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