

COMMUNITY OR AND OR FOR DEVELOPMENT: A SOUTH AFRICAN PERSPECTIVE

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ABSTRACT

An overview is given of Community Operations Research and of the connection between OR and development. The RDP is the main framework for development in South Africa, and its present state is described. Some suggestions are made as to ways in which ORSSA could support the RDP and development in South Africa.

UITTREKSEL

‘n Oorsig word gegee van “Gemeenskaps-ON” en van die verband tussen ON en ontwikkeling. Die HOP is die vernaamste raamwerk vir ontwikkeling in Suid-Afrika, en die huidige toedrag van sake word beskryf. ‘n Paar voorstelle word gemaak oor maniere waarop ONSA die HOP en ontwikkeling in Suid-Afrika kan help bevorder.

KEY WORDS: Community Operations Research; development; Reconstruction and Development Programme (RDP).

1. INTRODUCTION

This paper addresses three questions: (1) What is Community OR? (2) What is “Development”, and how can OR contribute to its achievement? (3) What relevance does Community OR in particular, or OR in general, have to development in South Africa? The reason for asking these questions is that ORSSA (the Operations Research Society of South Africa) decided in 1995 to become actively involved in the implementation of the RDP (Reconstruction and Development Programme), which in South Africa was then the main framework for development. As there are similarities between this initiative and the

Community OR initiative launched by the British OR Society, it is interesting to compare the two and to see what can be learned from the British experience.

In October 1995 a seminar titled “The RDP – A Challenge and Opportunity” was organized jointly by ORSSA and the Statistical Association of South Africa. The papers delivered on that occasion were collected in a special issue of *ORiON* (V.12 of 1996). The main impression (perhaps a subjective one) gained on re-reading these papers is the emphasis on the “scientific” and quantitative aspects of OR. A few quotations will illustrate this:

“Statistics, as the scientific field of study concerned with the collection of data and the process of extracting information from it...and Operations Research, as the scientific approach to solving decision problems...are clearly both of central importance in the planning, execution and monitoring of RDP programmes.”

“..the tremendous need for quantitative skills in all aspects of the RDP..”

“..the biggest impact that OR can make and the greatest contribution toward the RDP, is contributing towards economic growth.”

A different note is sounded in the last paper, by Jonathan Rosenhead [1]. (This is a reprint of the original, for which the reference is also given). He remarks, for instance, “For our purposes, then, development can most securely be identified with community development, not economic development”. He addresses almost the same questions posed above, but from a different angle: he hopes that “...community OR...might learn from OR aimed at promoting the self-reliance of communities in developing countries”. Rosenhead's paper gives a much more complete overview of both themes than is attempted here, and the reader is urged to study it.

2. COMMUNITY OPERATIONS RESEARCH

Community Operations Research (referred to by the acronym COR in this paper) is closely associated with the person of Jonathan Rosenhead (but see [2] for an historical survey of its antecedents.) When Rosenhead was elected as President of the British OR Society (ORS) in 1985, the COR Initiative was formally established. During the next three years, a COR Unit

was opened at Northern College in Yorkshire, a COR Network was started to link people interested in COR, and a Centre for COR was founded at Hull University. After nine years at the Northern College, the COR Unit recently moved to the Lincoln School of Management at the University of Lincolnshire and Humberside [3].

It is possible to characterize COR from several different perspectives, for instance (i) its clients (ii) its methods (iii) its aims.

- (i) Its clients are in the first instance defined negatively, in the sense of **not** being the traditional OR clients such as "profit-making organizations both publicly and privately owned (medium and large); local and central government; and non-profit state organizations such as the National Health Service and education" [2, p. 581]. What is left is a heterogeneous collection including NGO's, voluntary and non-profit organizations, trade unions, community groups and charities. It is difficult to define their common properties, partly because of their diversity but also because there are different views as to the purpose of the initiative, which influences the choice of clients. Broadly speaking, they tend to lack resources, to be representative and non-hierarchical and to be attempting to better the lot of their members in some respects.
- (ii) Some proponents of COR argue that its context leads to a preponderance of "soft" and ill-defined problems, which are best tackled by "soft" techniques such as Soft Systems Methodology (SSM) and cognitive mapping. On the other hand, it is claimed that there is an equal need for "hard" analysis and advice, and that analytical and statistical skills are still necessary [2, p.583]. According to Ritchie: "...the Unit helped to dispel the myth that community OR was just 'soft' OR or problem structuring. I suspect that we might have become best known for working with participatory and action methods. ...The majority of work in the later years of the Unit was focussed around 'community-led research'.." [3, p.23].
- (iii) From its inception COR has had an explicit social function, namely "...to act in the interests of social well-being and humanity" [2, p.578] and "to help groups deal with their problems" [2, p.580]. This social commitment also seems to be the common factor characterizing the members of the COR Network. The following quotation is apposite: "The most effective and significant...work at present is being done by people

who are committed to the cause for which they are providing help" (Ref. 19 in [2, p.585]).

It appears from the above that the common factor between clients, methodology and aims is that of social involvement. The clients of COR are striving to improve the circumstances of their members; the characteristic methods are participatory ones, and the most effective practitioners are those who identify with the aims of their clients. To illustrate this, a few examples of COR projects are given below.

- (a) Helping to choose a location for a new access centre in Lincoln (UK) based on the inhabitants' perceptions rather than statistical indicators.
- (b) Defining a social rather than a medical model of health in the context of developing a public health policy based on a needs assessment in a housing estate in Spalding, Lincolnshire (UK).
- (c) Developing an office duty roster for the staff of a project to provide short-term housing for young people in Earls Court, London.

Although not part of the ORS initiative, and in fact preceding it by almost twenty years, the Mantua Project initiated by Russell Ackoff [4] should be mentioned here. As this is required reading for anyone interested in development, it will not be discussed at length. Suffice it to say that it describes the involvement of OR practitioners from the University of Pennsylvania in the development of a community (a "black ghetto" in American terminology). To my knowledge no comparable effort has been recorded; perhaps the time (during President Lyndon B Johnson's "War on Poverty") and the personality of the project leader made it unrepeatable; it nevertheless remains a remarkable achievement.

3. OR AND DEVELOPMENT

Since World War II the concepts of development, underdevelopment, development aid and related terms have become common currency, especially in economics and international relations. Initially development was often equated to an increase in the economic growth rate of a country, or increases in social indicators like post-natal survival rates, literacy or housing stock. However a more nuanced view of development has gradually emerged where more emphasis is placed on an increase in the "quality of life", a point of view stressed by, among

others, Russell Ackoff – see for instance [5]. To put it another way, there can be development without growth, and also growth without development. As Ackoff puts it in his provocative way, "A poet can develop without growing; a rubbish heap can grow without developing".

Nowadays, it is generally accepted that "development" should include dimensions of poverty reduction, community empowerment, and sustainability. As the United Nations puts it, a new paradigm of development is called for, one which "puts people at the centre of development, regards economic growth as a means and not an end, protects the life opportunities of future generations, as well as the present generation, and respects the natural systems on which all life depends". Accordingly, development indicators also need to go beyond Gross Domestic Product (GDP) and per capita income. The Human Development Index (HDI) which is increasingly being used by international development agencies, represents a measurable criterion to compare levels of development across regions or countries. The HDI is a composite of three basic indicators of the state of human development: longevity, knowledge and standard of living. Longevity is measured by life expectancy. Knowledge is measured by a combination of adult literacy (two-thirds) and mean years of schooling (one-third). Standard of living is measured by purchasing power, based on real GDP per capita adjusted for the local cost of living (purchasing power parity, or PPP). In short, the process of development may be understood to refer to the improvement of the life-chances and living conditions of people living in a region, with particular reference to the poorer groupings of that population. The HDI may be considered an indicator of development understood in this sense.

There is an extensive literature on OR for development; see [1] for details. Interesting examples of the application of OR to problems in development are given in a recent publication, *Operational Research for Development* [6]. (A review has appeared in the *Newsletter for Operational Research for Developing Countries* [7]). One of the noteworthy contributions is that of Tripathy, "Approaches for Successful O.R./M.S. Application in Developing Countries" [6, p.345]. A few quotations will give the flavour:

"The OR/MS scientist must undertake the study with a missionary dedication rather than playing the role of an external consultant".

“The OR study is in a sense a change process;...the OR team should be prepared to be involved in an educating process of all the people involved in the study”.

This may be easier said than done: old habits die hard! To take the case studies in [6] as an example, the majority are solely or mainly concerned with a technical problem and its solution, for instance a mixed-integer program for the long run supply of petroleum products in India. One does find a minority of cases which explicitly take into account the people involved, for instance "Assessing the Human Impact of Canal Building in the Sardar Sarovar Project", by Appa and Sridharan. What this collection of cases illustrates clearly is that there is as yet in the OR community no consensus as to the meaning of “OR and Development” – whether this simply means “OR practiced in developing countries” or “OR applied in situations where human development is important”.

To conclude this section it is illuminating to look at a theoretical framework for the possible use of OR/MS in the planning and management of development described by Sagasti [8]. After pointing out some of the pitfalls (e.g. "Clouding the issues to make them unintelligible", "Model fetishism" and "Satisfying ego trips of foreign researchers") he states that decisions with regard to the planning and management of development can be grouped into five categories.

"These five anticipatory decision categories are the domain of stylistic, contextual, institutional, activity and resource planning. The interactions among these categories of decisions can be summarized by saying that *resources* are allocated to *activities* through *institutions*, taking into account the *context* in order to approach the *desired future*." (p.943).

As "traditional" OR is mainly concerned with the first two categories, namely the allocation of resources to activities, this would indicate, as Sagasti suggests, that OR practitioners concerned with development should be prepared to devote more attention to other aspects such as its vision, its context and its goals.

4. DEVELOPMENT IN SOUTH AFRICA: THE RDP

As stated in the Introduction, in South Africa the RDP was in 1995, when the ORSSA initiative was launched, the main framework for development. Since then the situation has

changed; in some circles the term "RDP" itself has become unpopular; be that as it may, it is a convenient shorthand term that I propose to retain in this paper.

What is the RDP? I would like to address this question under three headings:

- the RDP as vision
- the RDP as macro-economic framework
- the RDP as organization.

These three aspects of the RDP correspond respectively to the desired future, the context and the institutions as described by Sagasti. These, then, are some of the issues with which OR practitioners in South Africa should be prepared to deal in connection with development.

4.1 The RDP as vision

The RDP had its origin in the Freedom Charter, which was formulated at the Congress of the People in June 1955 [9]. The Charter was an integral part of the political struggles of the succeeding four decades. After the unbanning of the ANC, the Charter served as the basis for the formulation of a party-political document of the ANC prior to the 1994 elections (sometimes referred to as the Base Document) [10]. After the formation of the Government of National Unity (GNU) a White Paper (government policy document) [11] was published in November 1994. At present this must be accepted as the definitive written version, although it is still the subject of much internal debate in the ANC.

The vision on which the RDP is based was enunciated as follows by President Mandela in his inaugural address to Parliament on 24 May 1994:

"My Government's commitment to create a people-centred society of liberty binds us to the pursuit of the goals of freedom from want, freedom from hunger, freedom from deprivation, freedom from ignorance, freedom from suppression and freedom from fear. These freedoms are fundamental to the guarantee of human dignity. They will therefore constitute part of the centrepiece of what this Government will seek to achieve, the focal point on which our attention will be continuously focused. The things we have said constitute the true meaning, the justification and the purpose of the Reconstruction and Development Programme, without which it would lose all legitimacy".

This statement would have a familiar ring in most "Westernized" or "social democratic" states at the beginning of the twenty-first century. South Africans, in my opinion, still have to reformulate and implement the vision in their own way. (This may in fact be the most important task facing us in the immediate future, and perhaps should be addressed by ORSSA – see section 5 below).

4.2 The RDP as macro-economic framework

Chapter Three of the White Paper is devoted to the economic policy framework of the RDP. It is difficult to do justice to this in a few paragraphs, but speaking broadly the following main threads may be identified:

- meeting the social and economic needs of the people
- achieving sustainable improvements through economic growth
- substantial public investment in infrastructure
- development of human resources and the labour market.

In short, a substantial involvement by government in the economy, primarily aimed at social and economic upliftment. (This does not necessarily mean social planning in the classical socialist or communist sense, but rather creating an “enabling environment” appropriate to a developing country).

Since 1996 the RDP has been supplemented (some would say supplanted) by GEAR (**G**rowth, **E**mployment And **R**edistribution) as the government's macro-economic strategy. Government spokespersons say that the goals of development are still the same, but that there has been a slight change in the methods used to attain these goals. COSATU (Congress of South African Trade Unions), for one, is not impressed by this argument, and interprets the change as an abandonment of the RDP and a surrender to supporters of the free market. Amongst the claims and counter-claims it does seem that there is now less emphasis on the government's role and on social spending and more on growth leading to employment.

4.3 The RDP as organization

In May 1994, former trade unionist Jay Naidoo was appointed as Minister without Portfolio in the Office of the President, with overall responsibility for co-ordinating policy and

implementation. The Minister was supported by the Special Cabinet Committee on the RDP and in Parliament by the Select Committee on the RDP. Several Provincial Governments also established RDP offices, usually in the office of the Premier or the MEC for Economic Affairs. (In the Western Cape, for example, the relevant department was initially known as "Economic Affairs and RDP"; after several reorganizations it is now known as "Economic Affairs, Agriculture and Tourism"). In Chapter Two of the White Paper the RDP structures at various levels of government are described more fully.

In June 1996 the entire programme was reorganized. Naidoo was given the portfolio of Posts and Telecommunications, and the programme was placed under then Deputy President Mbeki. The officials in the RDP office were dispersed to various line departments; the former Director-General, Dr Fanaroff, is now (rather ironically?) in charge of drafting legislation on gun control at the Department of Safety and Security. The various programmes concerned with water, housing and health were again made the responsibility of the line departments.

In 1998 a "Coordination and Implementation Unit" was established in the Deputy President's Office. It has been suggested that this is in some sense a continuation of the RDP office. If it is, it is probably so only in the sense that it is trying to avoid overlap between departments and to coordinate development efforts. It can certainly not fulfill the public role which is also an essential aspect of the RDP.

As regards the parliamentary structures, a report in the "Mail and Guardian" newspaper (February 28-March 6 1997) titled "RDP committee seeks resurrection" is illuminating. Mr M Sisulu, former chairman, is quoted as saying that a report was drawn up recommending that the committee be reinstated and endowed with greater authority to monitor projects that fall under the RDP regardless of what ministry runs them. The newspaper comments: "Like the programme, the committee still exists in name, but with no ministry to oversee". At present (May 2000) the situation has not changed.

4.4 Local RDP fora

Apart from RDP structures at national and provincial level, the White Paper also envisaged RDP fora at local level, charged with implementing the RDP in their own areas. These took

various forms determined by circumstances in various areas; specifically the form often depended upon the way in which local communities handled the transition period prior to the elections of May 1994. In many communities there were discussion groups or fora, often crystallizing around a single person, a small group or pre-existing organization such as a peace committee. After the elections efforts were made to turn these more or less informal groupings into formal structures designed to help identify, formulate and carry out RDP projects. In fact it was stated from the beginning that these fora would be the most important mechanism to implement the RDP, mainly by influencing local authorities to reshape their budgets in line with RDP priorities. (It should be noted that in some areas the name "RDP Forum" has been replaced by "Local Development Forum").

In most of the country these fora do not seem to have lived up to expectations. (It is very difficult to obtain any information about the RDP from provincial governments, let alone local ones). Due to my personal involvement with a local forum in the Helderberg municipality in the Western Cape, I can provide some perspective on the situation in this province. Here some 50 fora have been accredited, based on criteria such as inclusivity and representativity. Local councils and RDP fora have found various accommodations, depending upon factors such as the composition of the bodies (party-political as well as personal) and the resources of the municipality. At the moment, with the next phase of the restructuring of local government in full swing, the RDP fora (and development issues as such) have been pushed into the background.

In the Helderberg municipality, the main problem of the forum has probably been the attitude of some councillors that they are the elected representatives of the people who have a mandate to handle all issues, including that of development, and that there is no need for the forum. Nevertheless, the council has provided sufficient funds to enable some permanent staff to be appointed and a few community development projects to be successfully carried out. The success stories so far include the erection of several creches and two multipurpose community centres, purchasing and hiring out a brick-making machine for self-building, and purchasing sewing machines to run courses for unemployed women; in all of these the forum played a facilitating role in obtaining funds from the provincial and central governments. From its own funds the forum has run empowerment courses on project management and obtaining housing subsidies.

My experience so far leads me to agree with Ackoff [4], whose conclusion in connection with the Mantua Project (see section 2 above) was that there was little opportunity to apply OR methods which were mainly concerned with efficient allocation of existing resources, and that the main task was to develop new resources. I can also testify that involvement in community development is an enriching experience; any effort towards improving the conditions of one's own community tends to counteract the negativism to which all of us are prone at some time.

5. THE ROLE OF ORSSA

The main thrust of the ORSSA initiative mentioned in the Introduction has so far been directed towards central government, with the emphasis being on organizing a workshop to introduce government officials to the methods of OR and statistics, and present success stories about applications of OR, especially in the public sector. (The connection with development is at best indirect, in the sense that if government decision-making can be improved by the introduction of OR, then development projects will be carried out more successfully.) Since 1997 there have been several attempts to organize such a workshop, but so far without success. Perhaps it is now time to reassess the chances of success of this approach.

If the ORSSA executive is convinced that this is the best way to implement the commitment that was made in 1995, there may be lessons to be learned from a previous effort to introduce OR in the Nigerian Government [12]. The purpose of the research which was undertaken is summarized in the first sentence, which reads as follows: "This paper reports the results of interviews with senior government administrators in Nigeria in which they were asked a series of questions about their own work and about the problems that are likely to be encountered in trying to introduce operational research into the government service". In my opinion, the main lessons to be learnt from this research are firstly the importance of the initial contact, which should be "serious, well thought out, and coming from a reputable source" and "...*should not appear to be threatening to the respondent*" (my italics). Similar points are made by a past president of ORSSA, who writes [13]: "I think the key learning from previous attempts is that we need a champion, supported by an organising committeewho has / have significant time to commit to getting this off the ground. The champion particularly would have to drive hard to get this together as everyone who would need to be involved is very busy and has to be

coaxed/cajoled/reminded into action! It probably follows that this needs to be in the direct interest of that champion".

There are also other courses of action that ORSSA might consider, including some of the following:

1. Initiate a debate on a common vision for development in South Africa – firstly among its members but perhaps later in a wider circle.
2. Include a regular section on development in the ORSSA Newsletter. (This could for instance be used to disseminate information on local development with a view to encouraging ORSSA members to take part in development projects in their own communities).
3. Review OR education with a view to seeing whether some aspects of development theory or practice (community OR) could be included in OR courses. Already some interesting experiments in this direction are being carried out, notably at the Potchefstroom University for Christian Higher Education [14].

It should also be mentioned that the ORSSA executive is organizing an international conference on OR for development under the auspices of IFORS (International Federation of Operational Research Societies) and EURO (Association of European Operational Research Societies); this will probably take place in April 2001. It is hoped to attract delegates from other developing countries, especially in Africa.

6. CONCLUSION

My conclusion regarding COR (admittedly based on the literature rather than on personal experience) is that even in Britain it is a fringe rather than a mainstream activity of OR practitioners; this is even more so in South Africa. Furthermore, in Britain COR is addressing problems arising in islands of poverty in a sea of prosperity; in South Africa similar problems arise in a sea of poverty dotted with islands of prosperity. It seems overly optimistic to think of establishing any of the structures that make up the COR initiative, such as the COR Unit and the Centre for COR, in South Africa. Nevertheless, some steps may be taken, small but not insignificant, which will lead to a greater awareness amongst members of ORSSA - and later perhaps in a wider circle - of the challenges facing us all as South Africans.

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REFERENCES

- [1] J. Rosenhead (1996) Enabling Analysis: across the developmental divide, *OriON* **12**, 69-103 (reprinted from *Systems Practice* **6** (2), April 1993).
- [2] R. Parry and J. Mingers (1991) Community operational research: its context and its future, *Omega* **19**, 577-586.
- [3] C. Ritchie and A. Gregory (1998) Community OR on the move, *OR Newsletter* June 1998, 22-24.
- [4] R. L. Ackoff (1970) A black ghetto's research on a university, *Ops Res* **18**, 761-771.
- [5] R. L. Ackoff (1975) Does quality of life have to be quantified?, *General Systems* **XX**, 213-9.
- [6] *Operational Research for Development*, edited by Jonathan Rosenhead and Arabinda Tripathy, New Age International, Delhi, 1996.
- [7] P Fourie (1998) *Newsletter for Operational Research for Developing Countries* November 1998, 9-10.
- [8] F. R. Sagasti (1976) Thoughts on the Use (and Abuse) of OR/MS in the Planning and Management of Development (Or: Can OR/MS Help in the Planning and Management of Revolutions?), *Opl Res Q* **27**, 937-948.
- [9] R. Suttner (1984). *The Freedom Charter - the People's Charter in the Nineteen-Eighties*, University of Cape Town.
- [10] *The Reconstruction and Development Programme: a policy framework*, Umanyano Publications, 1994
- [11] *White Paper on Reconstruction and Development (Cape Town, 15 November 1994)*, Government Gazette, vol 353, no 16085, Cape Town, 23 November 1994.
- [12] A. Idama and R. Tomlinson (1986) The prospect for O.R. in the Nigerian Government Service - an administrator's viewpoint, *J Opl Res. Soc.* **37**, 195-202.
- [13] Elsbeth Dixon, CSIR, personal communication.

- [14] Anne-Marie Pothas, Potchefstroom University for Christian Higher Education, personal communication.