



**Reflections on agriculture and rural development,
drawing on experiences in South Sudan in the 1970s
and early 1980s**

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1 Introduction¹

The aim of this paper is set out some reflections on agricultural development work that I, along with a number of other people present today, was involved with in the 1970s and early 1980s in South Sudan. I hope some of it may be relevant to what some of you in the audience, whether in the University as students or faculty, the government, development agencies or private companies, are thinking about or doing now.

A few comments to start with: first, I am not at all knowledgeable about work now being done on agricultural and rural development in South Sudan, so please do not look for insights on that. However, I have worked on these subjects over the years in much of eastern, north-eastern and southern Africa, and will reflect on some lessons from there. Second, this is a personal story, and does not claim to provide a comprehensive overview of all that was being done at the time I was here. Others in the audience will no doubt be able to fill out the picture.

Third, may I give some personal context? I worked here as an agricultural economist for four years, from 1976 to 1980, in my late 20s, as part of the largest internationally-supported effort to promote agricultural development in support of the new regional government. This initiative went by the name of the Project Development Unit or PDU for short, and came under the Ministry of Agriculture. It was a huge privilege to be here, and it remains one of the most formative experiences I have been lucky enough to have. I worked with wonderful people, not least in the then Regional Ministry of Agriculture. Among others, some of them here now, I would like to acknowledge Dr David Bassiouni who played an important leadership role as Director-General.

I was based in Juba, but also able to travel widely and freely, especially in the floodplain areas of Bahr-el-Ghazal and Upper Nile Provinces (there were then only three provinces), mainly in Gogrial, Rumbek, Malakal and Bentiu, carrying out surveys of how people then made a living, and what their problems and priorities were. My brief was initially primarily to do with livestock areas, although I also carried out monitoring surveys for the crop work of the PDU, based in Yei.

In this paper, I will first set out some of the wider context; then describe some of what was done in South Sudan; and then mention a few reflections. There will be time for Q and A.

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2 Context

I'd like to explore three elements of the wider context in which this work took place: history; the situation in South Sudan in the 1970s and early 80s; and international approaches to agricultural and rural development.

2.1 Historical

To understand the present, one must understand history, so let us start with some history. I approach this with some trepidation because there are people here who know a great deal more about the history of South Sudan than I do.

Most striking is that the 1970s was the first ever sustained comprehensive attempt at agricultural development in South Sudan, so those working in the 1970s had little precedent and experience on which to draw from within the country. The British took control of the South around the turn of the last century. The first few decades for them were primarily concerned with what they called pacification, lasting until the 1920s, as many of the people in the area resisted colonisation. Development was not then, or for another two decades, a priority. The 1930 Memorandum on Southern Policy isolated the South from the rest of the Sudan economy, suppressing long-distance trade in order to discourage northern and Muslim influence. The minimal education offered was largely in the hands of missionaries. The first major agricultural scheme (planned in 1943 by the director of agriculture, JD Tohill) was the innovative but localised Zande Scheme to grow cotton and manufacture cloth at Yambio and Nzara, initially only for the local economy because of prohibitive costs to the world market. It is striking that under the five-year plan adopted in 1946, of a total development budget for South Sudan of ££1.25 million, fully 80% or ££1million, was earmarked for the Zande Scheme².

In the cattle-producing areas of the floodplain, various attempts had been made to stimulate offtake for the long-distance market, apparently mostly unsuccessfully, by forced sales in Bahr-el-Ghazal, and then increasingly rather more successfully by improved veterinary services to reduce mortality. But sales still remained at what the authorities regarded as very low levels.

The other major thrust of development was the proposed Jonglei Canal. A Southern Development Investigation Team produced its interim report in 1954 (a technically fine piece of work). It was intended to lead to the digging of the canal to release more water for northern Sudan and Egypt. The Team's work was based, for the first time, on seeing South Sudan's economy as complementary to that of North Sudan, and it followed the decision that Sudan would come to independence as one country.

When the civil war began in 1955, all of this stalled at a time when in eastern Africa a good deal of development was taking place. It was only with peace in the early 1970s that the situation changed.

2.2 The period of the southern regional government

There had been some very limited attention to development during the period of the civil war 1955-72, but the authorities' focus was on the war, power was held by northern

² 'Sources of change in a Cinderella dependency: The Southern Sudan 1898-1955. John Tosh, undated mimeo.

Sudanese whose interest in the development of the South was limited, populations were insecure, with many in exile, and the conditions for agricultural investment (in for instance tree crops) did not exist. The Zande Scheme was still there, but operated at a very low level. Tea bushes at the Iwatoka Estate near Yei grew to 30 feet high, having not been pruned for decades.

With the 1972 peace agreement, one of the most basic pre-requisites for development, a degree of stability, was in place. Many people returned from exile. It was a period where life was very hard for many people, poverty being widespread and public services very limited, but equally there was a sense of building and of future potential as communities built schools and farmers cleared land. But the constraints were severe: budgets were very limited, as were skilled, educated and experienced people. The formal private sector was very small, and to a considerable extent in the hands of non-Southerners, whether traders from north Sudan, or a few foreign-owned trucking and other businesses. An exception was the well-developed and Southern-owned trade in livestock, based on trekking animals sometimes hundreds of miles from auctions in producing areas of the floodplain to Juba, to the cattle-free Ironstone Plateau and Green Belt, and to northern Sudan.

And there was a new regional government, giving some priority to development alongside the inevitable security concerns. However, trained manpower and funds were very scarce, and the new institutions were still weak. But progress was made, not least in building staff skills in agriculture, including through establishing training institutions and overseas scholarships.

Oil, which has become such a powerful driver of South Sudan's political economy, was not found until 1979.

2.3 International thinking on agricultural and rural development

Given the newness of development in South Sudan, ideas tended to be strongly influenced by approaches to development internationally, and especially elsewhere in east Africa³. What were these?

This period coincided with a change to thinking internationally about approaches to development and poverty reduction. There was a major milestone exactly fifty years ago when World Bank President Robert McNamara made a famous speech in Nairobi⁴. I will spend a little time setting out the main points, as this speech was highly influential not just in the World Bank, but among the main official development agencies globally, and certainly in South Sudan.

Points made by McNamara included that: "The basic problem of poverty and growth in the developing world can be stated very simply. The growth is not equitably reaching the poor. And the poor are not significantly contributing to growth."⁵

³ The northern Gezira Scheme was less of an influence as the agro-ecological conditions were very different and the large-scale irrigated model of little relevance to the South.

⁴ Address to the Board of Governors. Robert S. McNamara, President, World Bank Group <https://documents1.worldbank.org/curated/en/930801468315304694/pdf/Address-to-the-Board-of-Governors-by-Robert-S-McNamara.pdf>

⁵ Ibid. p.10.

He talked about the narrowness and inadequacy of GNP as the sole measure of what governments and lending agencies were aiming at. And he went on to commit to ensuring that “important questions of equity became an integral part of project evaluation procedures both within the developing countries and the lending agencies”. He went on to note: “Clearly, the bulk of the poor today are in the rural areas”⁶. He also said: “Some of the absolute poor are in urban slums, but the vast bulk of them are in the rural areas. And it is there - in the countryside - that we must confront their poverty”⁷.

A section of the speech is entitled “A strategy for rural development.” It is smallholder-based. He said: “There is ample evidence that modern agricultural technology is divisible, and that small-scale operations need be no barrier to raising agricultural yields.”

He then examined the challenges to implementing a smallholder-focused approach. The most difficult was seen as reorganising governments to support small farmers. He also set out the need for land reform, access to water, credit, extension and research, and also wider services, including infrastructure, education and health.

Finally, he committed to a massive increase in World Bank spending on agriculture in 1974-78. This led in 1975 to a Sector Policy Paper on Rural Development --- rural development being at the core of the World Bank’s approach to investment in agriculture, alongside other rural services.

The World Bank was then, as now, the leading development agency, and his speech was highly influential. What followed? For the main official agencies, poverty reduction became an explicit goal if it had not been before, poverty was seen as mainly a rural challenge, and there was a massive increase in efforts in agricultural and rural development globally.

Implicit in this speech was an answer to a fundamental question for public policy, a question that is crucial for South Sudan, and to which I will return: what should the role of the state be, alongside other actors such as the private sector, cooperatives, civil society, and so on. The implicit answer of the World Bank in 1973 was that Governments were seen as having the lead role in development. Interestingly, McNamara’s speech made no mention whatever of the private sector.

A particular model for agriculture and rural development was adopted, with local variations, which affected the design of the PDU in South Sudan in 1974. There was a recognition (in my view correct) of the multiple interlinkages between the causes of poverty and the measures needed to reduce poverty. But this led in many countries to multi-component Integrated Agricultural Development Projects and Rural Development Projects. Many of these were large, overly complex and difficult for even administratively strong governments to undertake.

By the late 1970s and early 1980s, two things happened to this wider approach to development.

- First, evidence began to build up that many of these agricultural and rural projects had poor results. A review by the World Bank in 1988 of its experience with rural development (in which I took part) found that ‘half of audited rural development

⁶ Ibid. p.12.

⁷ Ibid. p.27.

projects in sub-Saharan Africa have failed.’⁸ Further ‘The sustainability of benefits from some of the successful area development projects is a major issue, especially when independent project management units are used, and when facilities are financed to a higher standard or intensity than in the economy as a whole’⁹. While these conclusions related to rural development, much the same applied to integrated agriculture projects. Not only was the integrated model widely abandoned, but support among the development agencies for agriculture and rural development as a whole lost credibility, and it took some 20 years to begin to regain that.

- And second, during the late 1970s and early 1980s in many countries it became apparent that economies stalled, in part because policies and institutions were dysfunctional, crisis being triggered by the 1979 rise in the price of oil. As the World Bank review noted ‘When appropriate national policies are absent, the ability to sustain even successful projects is doubtful’¹⁰. Project lending was scaled back, and at least three major strategic changes happened.
 - First, to address dysfunctional policies and to support economies in crisis, Structural Adjustment Programmes (alongside IMF stabilisation programmes) were widely adopted.
 - Second, an approach that was wider than projects was adopted, in the form of sector approaches (for instance the agricultural sector). These combined policy and institutional reforms and public investment. In the agricultural sector, this meant less use of stand-alone project units, such as the PDU, and more support to systems, for instance for research and extension, or input supplies.
 - Third, many countries looked again at what should be the role of the state in agriculture and rural development, as opposed to, or alongside, the private sector, farmers’ organisations and civil society.
 - A useful review in 1998 entitled ‘Changing public and private roles in agricultural service provision,’ found that the landscape had changed: ‘Whilst in the past public sector agencies were frequently the only providers of all manner of goods and services, and individuals were consequently very dependent upon them, there is now far more choice and a philosophy of institutional pluralism.’¹¹ And it goes on: ‘Partly due to the many market failures identified, there are no areas of service provision in which complete government withdrawal appears prudent.... The emphasis is, though on facilitation. It is only where other suppliers do not exist (possibly because of market failures) or where the narrow economic efficiency implied by dependence on markets is not felt to be socially acceptable that the government itself should become a supplier..... In particular, the poorest living in the most remote areas will tend to be ill-served by markets.

⁸ ‘Rural Development: World Bank experience, 1965-86,’ Operations Evaluation Department, World Bank, 1988. p.xvi.

⁹ Ibid. p.xvi-xvii.

¹⁰ Ibid. p.xvii.

¹¹ ‘Changing public and private roles in agricultural service provision,’ Diana Carney, ODI London 1998. p.74.

Among these will be many women who, in most countries, have very little access to cash since they are limited to household and food crop activities'¹².

3 Agricultural development in South Sudan in the 1970s and early 80s: what was done?

3.1 Understanding of the problems

What was the understanding in South Sudan of the problems in the early to mid-1970s? In many ways these echoed strongly the challenges that the World Bank identified in 1973. First, poverty was severe and overwhelmingly rural. Second, there was the return of perhaps one to two million people who had been displaced by the war, with an urgent need for humanitarian aid, but also as soon as possible for them to step up their own food production and to begin to generate incomes and livelihoods. Third, there was an acute lack of resources, both human and financial. Fourth physical infrastructure --- roads, power and water supplies --- was deficient. And finally, public and private institutions were weak: the new regional government had a huge task of building itself; and the private sector was extremely limited.

During the 1970s there was a sense that something was being built, but there was a widespread awareness that the peace was fragile. The current Vice-Chancellor of this University, Prof John Akec, said: 'For a decade, we were at peace, and we had a taste of freedom.'¹³

3.2 Overall approach

I will focus principally on the work of the Southern Region Agricultural Rehabilitation Project, and its successors, the Southern Region Agriculture Project, and then the Equatoria Regional Agricultural Project which separated from the larger whole --- all still known colloquially as the Project Development Unit (PDU). That is what I worked on. It was funded by the World Bank and the governments of Germany and the UK, with IFAD joining the second phase, and was the largest and best-resourced of the agricultural development initiatives of the time. But it is important to put it in the context of what else was going on. The Regional Ministry of Agriculture, under which the PDU was located and to which the PDU reported, directly managed other agricultural projects, for instance in coffee, and it also had a Planning Department. There were other internationally-supported projects, for instance that of the FAO near Wau, a Norwegian-supported project on the East Bank, a Dutch-supported pilot project on the Penko Plains near Bor, a rice scheme at Aweil, the CDC-supported tea-growing in the Imatong Mountains, and so on. There were several NGO-supported agricultural activities, some of them church-related. There were a very small number of privately-owned larger-scale enterprises, notably the Iwatoka tea estate of the Haggar family.

Along with many of the agricultural projects designed in the 1970s, and the sense of urgency and great needs in South Sudan at the time, the PDU was notable by its relatively large scale and its geographical reach. Its focus was on a range of crop and livestock services, directly

¹² Ibid. p75-6.

¹³ 'We have lived too long to be deceived: South Sudanese discuss the lessons of historic peace agreements', London Rift Valley Institute, 2014. P.8. Quoted in Peter Martell 'First Raise a Flag: how South Sudan won the longest war but lost the peace,' Oxford University Press. 2018.

implemented or in the form of support to other development projects in many districts across South Sudan. There were: veterinary teams based in Malakal, Wau and Juba supporting the cattle vaccination campaigns against Rinderpest and Contagious Bovine Pleuropneumonia, establishing local laboratories, and bringing in vaccines from Kenya; a livestock ranch at Marial Bai north of Wau; the main crop research centre at Yei, with outstations in different ecological zones; crop extension services especially for diffusing new food crop varieties; a nutrition programme based at Yei; a smallholder coffee programme also based at Yei; a rural roads construction unit; and in Juba the project HQ, with a planning unit, procurement office, stores and workshops.

The first phase ran from 1974 to 1979; a much more ambitious second phase (the Southern Region Agriculture Project) ran from then until 1984. The second phase was due to fit into a broader Regional Small-scale Agricultural Development Programme (RSADP) which was to provide a 15-20-year perspective within which various projects might be fitted. Each of the 23 districts covering the whole of South Sudan would go through a preparatory phase of planning, followed by a five- to eight-year development phase, following which the various services would be transferred from the project to the Ministry's budget.

Logistics were extremely difficult. The original plan had been to supply the project from Khartoum but it was rapidly realised that that was impractical, so supplies all came from Kenya usually via Uganda but there were periods under Idi Amin when that was not possible, and trucks would come via Kapoeta. Building materials and fuel had to be ordered over one year in advance. Under those conditions, setting up PDU from scratch and keeping its activities running was a considerable achievement.

Features of the PDU were:

- Much of PDU worked under the Regional Ministry but was not functionally integrated with its various units. There were criticisms that this missed opportunities to build up the Ministry's capacities, and may even have weakened it. PDU's veterinary work directly supported the Ministry's Vet Department and the vaccination campaigns across the whole region.
- Recruitment of senior staff, both Sudanese and expatriate was a huge constraint, with many roles going unfilled.
- Senior staffing was heavily expatriate, reflecting manpower realities in South Sudan at the time. The second-phase project was planned to have a total of 252 man-years from no fewer than 67 expatriates¹⁴.
- There was a sense of urgency to get things done, sometimes from the regional Ministry and sometimes from Khartoum (such as the directive to develop soya-beans on a large scale)
- Relations between the Ministry and the PDU were often difficult. Political levels of the Ministry were seen to issue capricious directives, and there were continual tensions over resources as elements at the top of the Ministry sought to control resources, such as fuel, cement and other supplies purchased under the project. A regular response to such

¹⁴ 'Sudan: Equatoria Region Agricultural Programme, 1984-87,' Overseas Development Administration of the UK FCO. P.4.

pressure was to ask which project activities the Ministry wished to stop in order to be able to release the resources being requested.

3.3 For illustration: three areas of work

This section sets out three areas that illustrate the work undertaken.

Foodcrop development. There was a sense of urgency around foodcrop development, with one to two million refugees returning to the country, and hunger widespread. Quick maturing varieties were emphasised, especially in order to fill the hungry gap in the early part of the rainy seasons before the main crops come on stream.

The crops dealt with were primarily sorghum, millet, maize, groundnuts, and Bambara nuts, and also to some extent pigeon peas (a legume with useful qualities as a windbreak and a source of firewood.) The principal activities were screening a range of imported short-season varieties, bulking those most suitable, and diffusing them among farmers, free or at cost, with the assistance of extension services. Early on, the Lulu and Serena varieties of sorghum from Uganda, Katumani and Western Yellow maize from Kenya, and Makulu Red and Mani Pintar groundnuts, were prioritised and taken up widely.

This work was led by the Crop Development Unit based at Yei, with substations in different agro-ecological areas: Malakal (on the floodplain), Yambio (Green Belt), and Rumbek (border of the floodplain and Ironstone Plateau), and through support to and liaison with other development projects across South Sudan.

Some of the lessons learned underlined that in an ideal world (which we were not), this sort of programme would be approached in a more measured and sequenced way, and that over time, the programme would evolve by incorporating lessons learned. What were the lessons?

- Some were technical, suggesting that more time on research before extending the results to farmers might have been better. For instance, Army Worm turned out to be a serious problem with quick maturing varieties which were an early-season food source for insects. Some suggest it might therefore have been better to focus on longer-duration varieties.
- Second, a more sustained effort at the start, and with a longer-term perspective, on training Sudanese staff would have been ideal. The education of many, perhaps most, had been disrupted by the war, and there was a great deal of ground to make up.
- Third, more time might have been spent on examining local farming systems and local knowledge, including via participatory mechanisms to identify farmers' priorities. One example: in Gogrial during the course of surveys I carried out, I found 47 varieties of sorghum being grown in one village, each with its own rationale; and seasonal labour scarcity was the major constraint for many farmers.
- Finally, perhaps more should have been done on legumes and nutrition, especially with female farmers.

There were significant achievements. A visit to Yei last week showed that farmers are still growing what are locally called 'PDU maize'. But to be fully effective ideally the work started would have been sustained for years of learning, refining, and adapting.

Coffee. Support to smallholder coffee was one of the more successful areas of activity. Historically, Robusta coffee had grown wild in parts of South Sudan, and was developed as a plantation and smallholder crop in the 1920s. Research got under way in 1951 with Robusta varieties being brought in from Tanzania and Uganda. By 1964, 6,280 feddans were under cultivation, but much of this degenerated during the years of conflict. The PDU programme got under way in 1974, aiming to rehabilitate and expand coffee production by smallholders in the Green Belt. Nurseries were set up, seedlings supplied to farmers, and advice provided by extension staff in the villages. The area planted grew from 1087 feddans¹⁵ in 1974 to 5,966 in 1979, and the number of farmers from 1,363 in 1976 to over 4,000 in 1979. Marketing was entirely left to farmers selling to traders, with much of the coffee destined for Juba and northern Sudan.

Farmers faced a range of constraints hindering productivity: these included the labour demands of intensifying the crop, the risk of moisture stress after flowering, constraints to mulching and supplementary irrigation, and a range of pests and diseases. One result was that smallholder yields were around one-third to one-half of those achieved at PDU's Kingi plantation, a common pattern for smallholders. Nevertheless, this is a story of promising achievement.

Why did this happen? Various factors probably contributed. First, was the presence of motivated farmers determined to re-establish production and livelihoods, some with the knowledge that returning refugees brought from Uganda and the then Zaire. Peace in the area allowed them to adopt a longer-term investment horizon and plant tree crops. Second, within the smallholders' farming system, coffee was a good cash-earning complement to the range of food crops grown, including cassava, grains and pulses. The food crops also will have helped farmers deal with the difficult cash-flow issue presented by coffee, resulting from the need to wait some years after planting for income to flow in. Third was the provision by PDU of the range of technical services needed. And fourth was the presence of traders to provide output markets.

This case underlines the general global lesson that many technologies are indeed divisible, and smallholders are likely to be energetic and rational, and to use scarce resources well, provided that they are not held back by a hostile wider environment and that they have access to supportive services whether from public or private providers.

The PDU's planning unit and the Project Formulation Unit. During Phase I, the PDU had a planning unit which undertook a range of functions, including surveys of farm management and of the wider constraints affecting the rural economy. Few if any such surveys had been conducted since the 1950s. A series of these were carried out in the floodplain area (Gogrial, Rumbek, Malakal and Bentiu, for instance). Among other results, they revealed the impressive scale of the livestock trade, the brilliant intricacy and diversity of farming and livestock management systems, and the extent of the seasonal labour constraint. In addition, there were monitoring surveys (including crops in Yei District, and among coffee growers in Yei and Kajo Kaji) to measure the impact of project activities. The coffee survey found that labour scarcity was a constraining factor, and began to investigate this in more detail.

During Phase I the unit worked separately from the Ministry as an integral part of the PDU, but during Phase II from 1979 it was reconstituted as a Project Formulation Unit with

¹⁵ One feddans = 1.038 acres or 0.42 hectares.

broader functions. This was in due course during the 1980s more fully merged into the Ministry's Planning Department.

3.4 Summary assessment

PDU's achievements were uneven: some, especially some of the foodcrop and coffee work, brought real benefits to significant numbers of farmers; vaccination campaigns were sustained for some years and veterinary laboratories built; staff training progressed, and some of those people are still in office now; some understanding was generated of farming systems in the different zones; knowledge was built up; and a broad strategy for agricultural development in South Sudan was developed in the early 1980s. But other activities had little direct impact.

One should not get the impression that all went smoothly. For much of the period, the PDU as a whole was rated as a Problem Project by the funders' supervision missions, in good part because of staffing difficulties and its over-centralised nature.

In the end, politics destroyed virtually all of it, with the resumption of the civil war. What was achieved was not sustained.

4 Reflections: lessons learned: what might be done differently?

A few reflections are in order.

4.1 Timing and sequence: building institutions and human capital

The new Ministry of Agriculture put considerable efforts into staff development, not least through scholarships abroad. As far as the PDU was concerned, there was a trade-off between on the one hand responding to the pressure to establish services needed by returning refugees and other under-served farmers, and on the other the longer-term building of staff capabilities. During the first Phase up to 1979 in particular, it is probably true to say that delivery was given priority; a review in 1984 found that achievements in staff training had been significant but uneven. One consequence was the heavy reliance on expatriates.

As an example of pressure to deliver, in relation to crop development screened varieties were rolled out to farmers rapidly, perhaps before all the implications were understood. Some people involved take the view that there was too much emphasis on research into short-duration varieties which turned out to be susceptible to insect damage.

However, after a few years one can see the shift from getting urgent short-term priorities done towards something more strategic:

- The devising of the Regional Small-Scale Agricultural Development Programme (RSADP) at the end of Phase I was a means of giving more strategic coherence to agricultural development, with a longer time-scale. It was intended to give greater early priority to learning, piloting and institution-building in the districts. This was logical; but given PDU's own capacity limitations, this expansion was unlikely to be practicable.
- As noted, staff training by the PDU was initially undertaken largely in-service, but also drawing on the Yambio Institute, but also with scholarships abroad. During the early

1980s a new Training Centre was constructed to put this onto a more systematic footing. This is one of the few facilities that still physically exists.

- In the case of the PDU planning unit, which became the PFU, in the 1980s it was integrated into the Ministry's Planning Department. Should this have happened earlier? Probably yes.

Three other questions are worth considering:

- Another manifestation of the pressure to get things done was that perhaps the approach to agricultural development should have been more participatory, more based on detailed understanding of the existing farming systems, and more based on the articulated priorities and needs of the people themselves. The pressure to deliver was only one explanation for this, however; another was the prevailing international thinking on agriculture and rural development which did not emphasise participatory approaches.
- Second, the approach should have been more alert to gender dimensions, to the differing needs and priorities of women in rural areas. To be sure, some surveys disaggregated labour roles by gender; and the PDU's nutrition programme heavily emphasised gender dimensions. But the overwhelming majority of senior staff, both Sudanese and expatriate, were male. Development approaches now would be far more alert to gender.
- And third, should the approach have been more strongly based on building local groups and associations of farmers, including women farmers, to strengthen social capital and rural institutions?

4.2 Scale and complexity

The PDU was relatively large and complex, reflecting both the needs of South Sudan and the internationally-endorsed approaches of the time.

However, a 1984 review of the PDU found:

“It is now seen that the project, in an understandable attempt to meet as many of the undoubted needs of the region as possible, was too ambitious in overall size and in functional and geographical scope. A highly centralised management system made matters worse; due to staffing problems and weaknesses in design of management systems the advantages of central administration have not been achieved and the inevitable lack of flexibility has caused frustration and delays in the field.”¹⁶

The centralised design was intended to achieve efficiencies, and no doubt to reduce the burden on the Ministry of having to deal with multiple small projects, which was a real problem for many governments. But in the end the disadvantages outweighed these potential gains. From 1984, the UK-supported elements, primarily on the crop side, were hived off into a separate project, the Equatoria Region Agricultural Programme (ERAP).

¹⁶ “Sudan: Equatoria Region Agricultural Programme 1984-87,” p8.

4.3 Knowledge management.

Much knowledge about agriculture and livestock was built up in a short period in South Sudan during the 1970s and early 1980s. As one example, there was a conference in Juba in June 1980 on what had been learned about priorities for agricultural research, introduced with a strategy statement by the Director-General, Dr Bassiouni. Between 35 and 40 papers were presented summarising a mass of information and ideas. I found these in my files, and along with other somewhat randomly retained papers, these are now with Dr Salah Jubarah. I have also found that most but not all of my copies of the reports on surveys we did on farming and livestock in the floodplain have been lost.

But in terms of the wider picture, how much of what was learned has been retained? Unfortunately, in many parts of Africa, and no doubt more widely, the record of governments in retaining and using knowledge that has been expensively and painstakingly built up is poor. I do not know the situation here, and I suspect in the National Archive, and certainly in this University's College of Natural Resources, and perhaps elsewhere, good work is being done to locate and reassemble what is available. The University of Bangor in the UK was commissioned to create a collection of what was available for South and north Sudan, and attempts are being made to locate that. But there can be little doubt that the troubled recent history of South Sudan massively disrupted what is available. One of the most cost-effective contributions to development must be to rebuild this useful knowledge base.

4.4 Modern communications

A striking difference between then and now is means of communications. Among the many constraints on agriculture in the 1970s was that these were then extremely limited. There were a few phone landlines within Juba and, with difficulty, one could make a call to Khartoum, but not directly to east Africa. The postal and telegram systems had effectively broken down during the war of 1955 to 1972. The PDU and a few other projects had established radio networks. There was limited public radio for news and a few other programmes, but if I recall, no private FM stations.

Mobile phone coverage is of course new, but at 13% of the population in 2020, it is still extremely low compared with the sub-Saharan average in 2020 of 82%¹⁷. The proportion of individuals using the internet is rising, but in 2020 was still only 7% compared with 29% for SSA¹⁸. In some parts of South Sudan, including Yei, use is being made of local radio to communicate development messages.

While low, these create new possibilities that did not exist earlier, and perhaps there is much more that can be done to communicate with and empower rural populations. Other parts of east Africa are showing how agricultural communications can be transformed by the use of modern technology: see for instance Shamba Shape Up in Kenya and Uganda, and its equivalent in Zambia.¹⁹ This broadcast programme reaches eight to ten million people in Kenya alone with messages on improved farming, and links with social media to provide interactive services.

Is the potential for a range of media such as mobile phones, the internet, local radio and TV being examined for South Sudan?

¹⁷ World Bank:

<https://data.worldbank.org/indicator/IT.CEL.SETS.P2?contextual=aggregate&locations=SS>

¹⁸ Ibid.: <https://data.worldbank.org/indicator/IT.NET.USER.ZS?locations=SS>

¹⁹ <https://shambashapeup.com/>

4.5 The role of the state

A central idea. Let us return to the question mentioned earlier: what should be the role of the state in agricultural development? The answer to this will vary in different countries, according to circumstances and needs, and the capabilities and motivations of the state. I am not well-informed about South Sudan now, and others will be better placed to think about this. But let me make some general points.

What should the state do? I would suggest that it is useful to think in terms of two dimensions when considering this. The first is a set of actions guided by local values ---- for instance equity between individuals, genders and peoples, and the reduction of poverty. These values will vary in different societies. But it would seem that the 50-year old arguments that poverty is largely rural and that a smallholder-led strategy makes sense remain valid on South Sudan. If so, then agricultural development would need to be part of the state's priorities.

The second is a set of actions to provide public goods. Public goods are needed in order to address market failures, and without them agricultural development, or indeed development more broadly, will not be successful. The economists among you will know that 'Public goods' is an economist's term covering goods and services which are necessary for markets (markets for labour, capital, land, farm inputs, food and so on) to work well, and therefore for economic development to happen. However, individual people and companies will generally not have the incentives to provide them, either at all or to the desirable level. Normally, the state will have to have a role in this, whether through funding, directly providing, or regulating.

What are these public goods? Most fundamentally, they include peace, stability and safety of individuals and communities. During the 1970s and early 1980s, a reason that farmers made progress, and PDU was also able to contribute, was that for most of the period, South Sudan was peaceful. When that public good was no longer there, development went into reverse.

Public goods also include infrastructure --- roads, transport, and electric power. But there are many others too ---- good administration, the justice system, the provision of basic education, much agricultural research, and so on. Individuals, companies and organisations such as NGOs can only to a limited extent substitute for the state in providing many of these.

Where public goods are in place, as to some extent during the 1970s and early 1980s, smallholder farmers have shown they can thrive, and poverty may fall.

Which public goods that are needed by South Sudan's farmers can be provided, and how? Who will fund them, and who supply them?

The state and the private sector in agricultural development. During the 1970s the prevailing wisdom internationally was that the state would play the dominant role in promoting smallholder agricultural development. As noted above, McNamara's 1973 speech made no mention of the private sector.

Elsewhere in eastern and southern Africa, states in the 1970s were indeed active in promoting agriculture, not just in public good provision, but also in commercial-type functions, notably in input and output marketing. It is not a happy story. Almost

everywhere they failed to do so efficiently; they undermined farming, and pricing policy and marketing boards and other instruments became means both of taxation and also of massive corruption and patronage. The economic reforms of the 1980s in many or most of these countries --- Kenya, Tanzania, Uganda, Zimbabwe, Zambia, Malawi, Mozambique, and in the 1990s South Africa --- saw the partial or complete dismantling of these structures, and a reduction in their roles.

To the present day, there is a far more realistic assessment in these countries of what the state is capable of doing in relation to commercial functions around agriculture. Indeed, worldwide, following the early 1980s, many (though not all) states are less engaged in commercial types of activities in agriculture, focussing their efforts and their funding more on public goods. That has been a great advance.

Conditions in South Sudan in the 1970s also pushed towards the state being a lead player. A new government had a sense of urgency to get development under way. The formal private sector of the time was not appealing to the new regional government, consisting as it did of a few companies, almost all owned by northern Sudanese or foreigners, most undertaking trading and transport. The informal rural sector comprised a host of micro-enterprises including trading, local blacksmiths and so on; there was also the substantial long-distance trade in livestock on the floodplain.

Yet despite these shortcomings of the private sector, perhaps recognising its own limited capabilities, the regional government fortunately did not make great efforts to extend its reach into large-scale commercial activities, and it avoided some of the mistakes of others. Trading of foodcrops, coffee and livestock was for instance left to traders. And the PDU innovated through using private smallholder farmers to bulk up crop varieties for extension more widely.

What determines state capability? This brings us to the question of what determines state capability. What influences whether the state is willing and able to provide the public goods needed?

Two types of factors affect this: first, technical and management capabilities; and, second, incentives which affect the priority given by the state to providing public goods. Much of this lecture was been about the first; PDU was created as means of beefing up the state's technical and management capacities. I'd now like to reflect on the second, the incentives that shape the decisions and actions of those with the power to determine what the state does. As we have seen, it is the course of history and politics in South Sudan that has trumped everything else in determining the success or failure of agricultural development. Again, to emphasise, I am not a specialist on South Sudan now, and others are more knowledgeable; but perhaps you may find the following discussion a helpful way of thinking about the policy challenges.

Though it was not used during the 1970s, there is a political economy concept that may be useful to bear in mind in understanding what happened then. This concept is the political settlement, otherwise known as an elite bargain. This may be defined as a tacit bargain or power equilibrium among elites, and between elites and their followers. Political settlements usually involve informal deals over the allocation and use of economic surpluses,²⁰ for instance from a mineral or oil sector. These deals in turn influence the policies and institutions that are adopted and how they work. It is important to note that a

²⁰ Normally called by the term 'economic rents' and may be thought of as super-surpluses

political settlement need only involve few people, the powerful elites, provided they have incentives to make it stick and the power to make sure it does. The political economy literature is clear on two things: that if a political settlement is not reached, then peace will not be assured; and that the nature of the political settlement affects the incentives that those with power have to promote broad-based development²¹.

As we now know, during the 1970s no such political settlement was in place, or if there was one then it was too fragile to last. There were powerful interests in Sudan as whole that did not gain enough to buy into and support the settlement; consequently, the war resumed, devastating what development had taken place.

Now that South Sudan is independent, is it possible that a new political settlement is developing, based substantially on who controls the large revenues from the oil sector? These revenues represent a radical change from the 1970s, when they did not exist, and have fundamentally changed the political economy of the country. Crucial questions are: whether the power that controls these resources will be concentrated in few hands, or dispersed among many conflicted groups; and whether those with power will have an incentive to adopt policies and develop institutions that are more rather than less likely to generate benefits for wider sections of society. Clearly, the answers to these questions will have powerful implications for the future of smallholder farming development and the extent to which the state provides meaningful support.

5 Conclusion

Let us end with a few reflections on some of the implications for agricultural development.

First, some of the conditions that temporarily enabled South Sudan to make some progress towards agricultural development in the 1970s and early 80s have changed. So one needs to think with a fresh mind. Many lessons from then are not readily transferable to now.

Second, it is as well to be realistic that some features of what may be an emerging political settlement are unlikely to create incentives for some time to come for the state to give genuine priority (as opposed simply to rhetorical priority which goes no further than fine words, and plans which gather dust on shelves) to smallholder agriculture. Progress can and we hope will be made, but the necessary broadening of the political settlement in most countries takes decades.

Third, the huge asset for smallholder agriculture in this country is the ingenuity, resilience and knowledge of many of the rural people. The 1970s showed that with the provision of key public goods, smallholder farming can begin to thrive. A strategy that focusses over the decades on building local human capital --- education, health, knowledge and skills --- may not directly address the wider political economy constraints and may not be dramatic, but it is perhaps consistent with current realities.

Fourth, and linked to that, is finding ways of empowering people locally through supporting social capital in the form of women's groups, savings associations, farmers' groups, and so on. There are many such initiatives in South Sudan that can be built on.

²¹ 'Political settlements and development,' Tim Kelsall et al. OUP 2022.

<https://fdslive.oup.com/www.oup.com/academic/pdf/openaccess/9780192848932.pdf>

Fifth, is to find ways of enabling and encouraging private informal and formal businesses, from micro to large, to expand the range of services they already provide for farmers.

Finally, no society has successfully developed without a state providing key public goods. Pursuing that has to be a continuing central part of the national agenda. But it is worth reiterating that, as people in South Sudan showed in the 1970s and show now, there is a great deal that individuals and communities can do while the historic process of building an effective and accountable state proceeds.