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アフリカ半乾燥地域開発の考え方とそのアプローチ

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テーマ： アフリカ半乾燥地域開発の考え方とそのアプローチ

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EMPLOYMENT:

1992 to date	Director, Club du Sahel, OECD
1989-1992	Senior Advisor, World Bank, Africa Region
1986-1988	Deputy Assistant Secretary of State for Africa, U.S. Department of State
1981-1986	Mission Director, USAID/Zimbabwe and SADCC
1979-1981	Director, Africa Bureau, Office of Development Planning, USAID
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EDUCATION:

Fletcher School of Law and Diplomacy, Boston, MA
Partial completion of Doctorate in Development Studies
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要　　約

1.　サヘルクラブの紹介

(1)　設立のきっかけは1972、73年に西アフリカのサヘル地域で起こった大旱魃。その時には莫大な額の海外援助金が緊急援助として使われたが、旱魃はその後も数年ごとに来ると予想されたため、対応策として、サヘル地域を飢饉から護ることを目的とする多国援助機関としてサヘルクラブは設立された。

(2)　UNDPの統計では、サヘル諸国は未だに教育、平均寿命、農業生産等が最低のレベルにある。しかし、食料の自給率は高く、アフリカの中では食料援助への依存が最も低い地域であり、その意味でサヘルクラブの活動は成功したと言える。

　サヘル地域の主要食物の供給は、同地域内に紛争が少ないこともあってここ15年間安定しており、需要と供給の差もサヘルクラブ設立当時は5、6年だったものが2年に短縮された。

2.　西アフリカの現状

　当初サヘルクラブはCILSS（サヘル旱魃対策国家間常設委員会）の9ヵ国（チャド、ニジェール、ブルキナファソ、マリ、モーリタニア、セネガル、カーボベルデ、ガンビア、ギニアビサオ）を対象としていたが、今後は西アフリカ全体を対象として捉える必要がある。

　現在西アフリカは、2つの急激な変化に直面している。一つは、世界経済との競合にさらされていること、もう一つは人口増加とそれに伴う都市化である。

(1)　世界経済との競合

　一時は欧州市場への進出が目標とされたが、ここ数年はむしろ地域内の市場に目が向けられており、西アフリカ諸国間の非合法な食料物資の流通は公式な貿易活動の5倍にのぼると考えられる。地域内の国境を越えた物資の流通が今後の経済発展の鍵となるだろう。　消費される食物の種類も20年前はコーリャンとキビが主体であったが、現在は多様化し野菜や魚の消費も増えている。また、農地開発や二毛作等の農業技術の導入・開発に伴い、サヘル諸国の農業生産量は増加の傾向にある。

(2) 人口増加と都市化

村落レベルの事例研究を行った結果、都市化は食料生産に対して自然条件に匹敵する影響を与えることが分かった。都市近くの農家は作物の輸送距離が短く、市場の情報が早く伝わるという利点を持っており、人件費の高騰や専業農家の減少等を考慮しても、都市化は農業の発展を促進していると言える。その結果として、都市近郊では伐採や焼畑に替わる、より持続的な形態の農業が広がりつつある。

この調査結果から、DACが目標に掲げている持続的な農業開発を西アフリカ諸国で実現させるためには、住民の高い移動性が必要であることが分かる。

3. 西アフリカ開発に係る今後の課題

(1) 最大の課題は、西アフリカの社会の変化に沿った協力プロジェクトの実施である。

(2) アフリカの将来は楽観的。ハーバード大のロバート・パトナムは人々の結び付きの強さを社会資本(Social Capital)として捉えることを提唱しているが、この点ではアフリカは裕福であり、これを活用できれば大きな発展が望める。JICAの将来の課題は、地域社会の現状と密接に結び付いたプロジェクトの実施であろう。

アフリカ半乾燥地域開発の考え方とそのアプローチ

Mr. Roy Stacy
OECDサヘルクラブ事務局長

Moderator: Good afternoon. Welcome to our Kokusoken seminar or IFIC seminar of JICA. At the Institute of International Cooperation or here headquarters of JICA, we occasionally have several kinds of seminars on related issues on developing countries, and economic and social development of those countries by inviting prominent lecturers who are in Japan and from abroad. Today, we will focus on Africa, Western Africa in particular, with the distinguished guest lecturer from Club du Sahel, the director of the Club, Mr. Roy Stacy. We asked Mr. Stacy to present us a lecture on issues and approaches to the development of arid and semi-arid areas in Africa. After the presentation, we will have time for question-and-answer section.

Let me introduce Mr. Stacy. Mr. Stacy has prominent experience in African affairs for more than 30 years at the United States Agency for International Development, officers in various fields, Director of Office of Southern Africa, Director of African Bureau and Mission Director for Zimbabwe and SADC; at the U.S. Department of State, Deputy Assistant Secretary of State for Africa, and World Bank Semi-advisor for African Region, and at present, Director of Club du Sahel of OECD. Now, I am pleased to introduce Mr. Roy Stacy for presentation.

Mr. Stacy: Thank you very much. I am very delighted to be here. Thank you for this nice introduction. I would like to start out, if you don't mind, by just saying a few words. Some of you may not know what the Club du Sahel is, and just to put my lecture in a bit of context, let me say something about the Club du Sahel.

We frequently get telephone calls in the office, people saying, "Oh, do you arrange vacations to the Sahel? Is this Club Mediterranee?" And we say, no, this is not the purpose of the Club du Sahel. Actually when the Club du Sahel was first started, the name was Club des Amis du Sahel, which means the "club of the friends of the Sahel". When the club started, it had its origins in the Great Drought of 1972-73. And at that time, it was predicted that there would be recurring droughts in this region, there would be recurring emergencies. During 1972-73, it had cost the international community two billion dollars just for emergency relief. And the prediction was that every few years we would have similar emergencies with a growing amount of ODA resources that would have to go for emergencies. And so the idea was to set up a special initiative, multi-donor, that would effectively begin to insulate this region from drought, and that was the idea of the Sahel Club. And we will have our twentieth anniversary this year. In a very important

sense, I think the Sahel has been a success story. You may find this surprising because if you got the latest human development report from UNDP, you would find that in almost every human indicator; education, mortality, agricultural production, the Sahel is almost last in most of the accepted development indicators. So how could I sit here and tell you that the Sahel is a success story? Let me try to temper my optimism by putting this in context.

If you assume that the predictions were correct, that this region would have recurring emergencies, would become more and more dependent on food aid, more and more ODA resources would have to go to emergencies; that has not happened in the last twenty years. As a matter of fact, the Sahel today is the region of Africa least dependent on external food aid. There are reasons for this. And I would argue that they have managed their vulnerability, they have managed their arid lands, and they have managed conflict better than other regions in Africa. The places where you have the greatest dependency on emergency relief is where you have had enormous conflict, the worst being Somalia, Rwanda, Angola, Mozambique. But in fact, the Sahel has had conflict. There is conflict everyday around natural resources. There have been even wars between the Touareg and Sohnghai, between the Mauritanians and Tukulor in the Senegal Basin, in the Casamance of Senegal. But all of these conflicts, they find ways of managing them. This does not mean they solve them. It's sort of like what my old professor used to call "peaceful perpetuation". You don't solve a problem, but you find a way to perpetuate it peacefully. In that sense, I think the Sahel has managed conflict better. And this is one reason why there is greater food security today.

If you look at the percentage of imported foods in diets in the Sahel, they have gone down steadily now for 15 years. And we calculate that the gap between the demand and the supply on food is now only a two year gap where it used to be five or six years between the supply and the demand response.

There has been very substantial diversification of production. Twenty years ago, Sahelian diets were largely from subsistence agriculture and very heavily weighted on sorghum and millet. Today those diets are less a function of subsistence agriculture, and many cases, a function of regional trade in foodstuffs. The other thing is that there has been a greater diversification of tubers and vegetables and dried fish in the diet than there was twenty years ago.

I will give you a very surprising statistic. These countries are primarily livestock producing countries, yet fish is a more important source of protein in Sahelian diets than red meat. And a lot of this fish is coming now from the coastal countries, not just from the rivers in the form of dried fish. It comes in the form of cross border trade, informal trade, that doesn't get into the

official data. And I want to come back to this problem of official data.

Because a lot of this activity has taken place again in the informal sector, we believe that some of the most dynamic parts of these economies are not showing up in the data. So on one hand, you can look at all of the official development indicators and conclude that the Sahel is the furthest behind, or you can look at how well they have managed vulnerability. You can look at the counterfactual. There were all of these predictions of disaster that didn't happen. So in that sense, I think it's a bit of a success story.

Let me go on now to talk a bit more about agriculture, and I may ask for some help to put one or two slides up on the screen.

The Sahelian region and for that matter, we tend to look at the Sahel now in the context of West Africa. When the Sahel Club started, we were focused just on the Sahel, on the nine countries that are members of CILSS. And obviously, we can't do that because the future of the Sahel is inextricably linked to that of West Africa.

Now this region is undergoing two, what I call megatrends. Megatrends are two major variables that are changing the societies. One of them is the complete exposure now to external competition. These economies through the colonial period and even in the early period of independence were protected in many ways by various macropolicies. You had overvalued exchange rates, etc., which really in a sense protected them from competition. Now with the effect of structural adjustment programs and various policy reforms, they are fully exposed to this idea of competitiveness. And this mentality now is going not only into the minds of policy makers, but certainly into the minds of entrepreneurs and farmers as well. Competitiveness is something now that is taking over in many ways.

Now the other major variable is population growth. And it's not just population growth. It's the changing demographics. And if you'll notice here that in the early years up until about 1940, these countries had practically no urban population. I think in 1960 the urban population in West Africa was only between 14 and 17 percent of the population. And by the year 2020, you will have 430 million people in West Africa, of which 271 million will be urban. I can't tell you the impact not only of the population growth, but of the rate of urbanization. These figures, frankly, are conservative. They have taken into account fairly modest improvements in mortality rates. They have taken into account mortality from AIDS. They have taken into account optimistic progress in family planning. And you will still have a minimum of 430 million people in these 19 countries of West Africa by the year 2020. We will come back to this fact of urbanization

and what it means on agriculture and also environment.

For the purposes of the paper I am presenting today, and I think it has been distributed to you, we have looked at village level case studies of 29 different researchers. And you can see the locations here of the various inquiries that were taken. What we tried to do is to accumulate a lot of village level research to tell us what is really changing in West African and Sahelian agriculture. The effects of demographic change are very noticeable because it's not just people leaving urban areas, to migrate to urban areas. In many cases, it is farmers that are moving closer to markets. And this phenomenon of people moving closer to markets and the higher rural population density, is quite important. What we've noted from this accumulation of field research is that it seems that actual production systems don't begin to intensify until you have the feel of the market, until the market actually makes an impact into that rural area. But at the same time, since the strategy of most Sahelian farmers is risk aversion, if they have an alternative to move, in other words, to farm in one area and then move to another area to farm, which has been the traditional practice of rotating fields, they will continue to do that.

The proximity to the market, in fact, has an ambivalent impact on farm output. On one hand, it's positive because the farmer has better market information and lower transaction costs. On the other hand, it may be negative because the farmer has higher labor costs because of alternative non-farm employment and it also puts greater population on the land because of the high population density. Taking these two alternate factors into account, we do believe that the density of urban markets is in fact having a very positive effect on agriculture.

The calculations of our work suggests that farmers do not begin investing in changed production systems and in recapitalizing their soils until after population density goes beyond 50 persons per square kilometer.

Let me use this particular graphic to show you what is happening with the influence of the market in rural areas. You can see that in 1960, it was virtually only in the north of Nigeria and along the coastal areas of Nigeria, Togo, Benin, and Ghana that you had a strong market influence. That has changed dramatically even in 1990. And by the year 2020, as you can see from the red areas, there will be a very strong market influence felt in rural areas. This is, of course, an application of the old Boserup theories, which many of you have undoubtedly studied. It is not uniform everywhere but what is happening is that there is a kind of bipolar agriculture that is developing. In the more remote rural areas there is still extensive production, slash and burn agriculture, mining of the soils, which is probably nonsustainable, whereas in proximity to the cities, in what we might call peri-urban agriculture, agriculture is becoming more sustainable.

You see a greater investment back into the soils and of course land tenure is changing faster in proximity to the towns so that you get a greater capitalization of land than you have had before. And so this sort of two world agriculture is very important. In other words, you shouldn't be seeking uniform applications to agriculture in West Africa because there are very different local situations.

I had mentioned earlier that the long-term production was really changing. Let's if we can just look at some alternative data for Nigeria and for Sahelian landlocked countries. In Nigeria, the population density, and I am not suggesting that high population growth is good. I am saying, like many things, it's good news and bad news. The good news is that where population densities pass a certain point, you do begin to get a changing agriculture. I think the turnaround effect is most notable in Nigeria because it shows that the food gap was mainly a macroeconomic problem. While Nigeria's total food availability in terms of calories per day did not change a great deal during those years there was a very sharp reduction in the percentage of imports after they did macroeconomic reform. Whereas in the case of Sahelian agriculture, and this one the chart on the right measures three countries, overall the Sahelian production grew faster than Nigeria. As you can see, from 1982 up to 1990 there were more important production and productivity increases in Mali, Burkina Faso and Niger, except for the drought in 1984. But the long term trend has been a reduction in imported calories from the earlier period here. But this shows the effect of the macroeconomic reforms that we did not have earlier.

Now, the strategies of Sahelian farmers and for that matter all of West African farmers, are really quite rational. The primary motivation is to safeguard the family and its means of survival in the long term. So there is a tendency to follow a high risk aversion, low capital investment, diversification of activity. Twenty years ago you had a situation where virtually every member of the family would be on the farm and today they make a different set of decisions. They may have only so many members of the family producing on the farm, whereas certain other family members would be, some would be sent off for more education, some might be sent off to the cities to work in some kind of cash employment. You would have a diversified situation where no more than 30 to 40 percent of family income would come from farm production, which means that people are not necessarily optimizing their agricultural output. It would be considered very high risk for them to put all of the family capital, and I am including labor and so on, into agriculture. So if we go in as a donor with a strategy which aims to optimize agricultural output to the exclusion of more diversified activities, in fact we are running counter to the trends, to the changes that the farmers themselves are adopting.

Now, it's true that subsistence agriculture still predominates in this region. And it's also

true that many town dwellers also want to minimize risk. But there is such a difference between the peri-urban production and the more extensive production, which I will come back to in just a minute.

What some of this data also shows us is that if we accept the DAC targets for sustainable agriculture, we would argue that sustainability in West Africa cannot be achieved without full movement of...the ability of populations to move across borders. In the last 30 years, 8 million people have left the Sahel for coastal countries. And while this may provide some difficulties for the coastal countries, these immigrants have provided a very important source of capital to go back into the Sahel and also a very important source of ideas.

In the last 15 years there has been a very substantial development in Burkina Faso and Mali, in the rainfall zone between 600 mm and 800 mm, of maize production. In fact, maize production in Burkina Faso since 1979 has been growing at 6.9% a year. And maize production in Mali during the same time period has been growing at 7.1% a year. Now, these are very remarkable growth figures for a crop in an arid land. The maize production has developed as part of a cotton/maize rotation. And it was the profitability of cotton which has opened the door for maize. Let me explain that.

If the farmers were producing just maize, they could not afford the fertilizer costs, whereas with the cotton production, it's economic to apply chemical fertilizers and then they grow maize as a second crop on the residue of the fertilizer application. So both of these make good economic sense when they go together but they wouldn't make good economic sense if they were separated.

So the cotton/maize rotation in these areas is a very remarkable improvement of productivity, at least for the farmers that do live in these particular rainfall zones. And in that regard, I wanted to show you another slide.

What you see here in this particular slide is that the percentage of total land in a zone is in dark. So for instance, this particular figure here is the land between zero and 200 mm of rain, whereas this down here would be between 800 and 1000, and this is between 600 and 800, and this is between 400 and 800. So you can see that the vast percentage of population lives in the higher rainfall zones. And if you look at Niger, you can see that there is a very tiny bit of land between 600 and 800 mm. Virtually most of Niger is between 200 and 400, and 400 and 800. And you can see that a large percentage of the land and a low percentage of the population live in those zones. So in these areas of low rainfall and very low population densities, frankly one can't expect any kind of intensified agriculture to develop. In these zones, they are going to be

largely livestock zones, which is virtually their only comparative advantage. But it also shows that if you look at this over a time series, you will see more and more that the farmers have been moving into the higher rainfall zones. And of course, this has been made possible by some of the progress in disease control. In the area of Burkina Faso and Mali, the fastest growing agricultural areas are the areas that have been liberated from onchocerciasis, from the river blindness, which allowed populations to move into these areas for cultivation that could not move into these areas before.

So one of the conclusions is, and I think you will face this issue when FAO has its world food summit this year, is where to focus the priority in terms of not only agriculture but also environmental management. And it suggests that more and more these efforts are going to be directed towards the high potential areas.

Now, that presents another set of problems. Where are the high potential areas? If you followed logic, you would think that the high potential areas are where the best soil and the best rainfall is. But even that's not necessarily true because right now the highest productivity is coming from peri-urban agriculture. And in many cases, where the river basins are, are far away from markets. And our analysis goes back to show that the market attractiveness is still the most important factor for changing production systems.

In Ghana, for instance, I was there recently, and some people were telling me that recent evaluations have shown that some of the old projects of twenty years ago which tried to bring new farming technologies that were considered failures as projects, are now succeeding. In other words, farmers are now adopting changed production technologies that they have known for a long time. These are technologies that have been there. And the only reason they are adopting now is the difference in the marketplace. Obviously, the policy reforms have had a lot to do with that.

The other thing that we are seeing in many of these countries is increased specialization of production. This is based on the constraints and the opportunities in different zones. One of the areas that we have been studying quite intensively is Kano in the north of Nigeria. The reason we have been studying that is that there has been an area of Kano, it's now a city of a million-and-a-half, maybe two million people, which is supplied by a wide variety of food products, everything from vegetables to grains to poultry to eggs to various kinds of dairy products, even fruit. Around Kano, you have areas there of 600 mm of rain, that have been farmed continuously for more than a century. The same land. And understanding why and how farmers have reinvested in their land, and understanding how and why land tenure has changed more rapidly in these

areas to permit the kind of investments in land, we think is very important for the future of the Sahel. And my conclusion would be, if I were to advise the FAO on where the high potential areas are, is that it's in proximity to markets. And the fact that you may not have rivers or you may not have the best soils is not as important as the market proximity, because even where you have better soils or better water, the distances involved imply too many costs and too many risks for farmers to really intensify their production when they are more remote from the market.

Now, there are one or two exceptions to this kind of generalization and this is what I call specialized production. You have certain niches in the market. For instance, in the northern part of Cote d'Ivoire, they are growing sweet potatoes, yams, for the coastal market exactly at the right time of year to get very good prices. So you have a kind of specialized area in the north of Ivory Coast. In Mali, in the Dogon area, you have onion production which started a long time ago and the Dogon have become very good at growing onions, and they export them all over West Africa. And it had to do with not only some cultural traditions with growing onions but also that the soils and the water management techniques in the Dogon area were highly suited for onion production and also for drying them. In other words, they would dry them afterwards and then export them.

So we do see specialized niches developing in markets. And we think this medium term trend will continue towards specialized production.

Now many of the farmers and for that matter the business-men and businesswomen have seen new opportunities in terms of the regional market. There was a time when everyone thought about conquering the European market or gaining access to the EC for their agricultural products. And while that's certainly still an important possibility, in the last few years many people have seen the profitability and the economic incentives in terms of the regional market. So more and more foodstuffs are coming out of Nigeria or they are coming out of the Sahel to go into Nigeria. And based on some of our work at the Club du Sahel, we believe that the amount of unrecorded trade in food products across these borders may be as much as five times the amount of actual recorded trade. That's why I noticed earlier that food security today is much more a function of intraregional trade than it ever has been before.

The difficulty of managing this transition from subsistence farming to market farming; there are a lot of intermediate steps here. And the markets that are developing are not just for food products. There are also markets developing in land, as land becomes more capitalized. There are markets developing in labor, with competing uses of labor. And there is also a market developing in the supply of farm machinery and seeds and things like this that you didn't have

before, which is increasing the competitiveness. But it also means that farmers have more decisions to make regarding the trade-offs between capital, land, labor, and what they do with their labor. This of course includes the technical decisions and I am speaking in this case about farmers that are practicing intensified agriculture that are closer to the cities. They also have to make other decisions regarding reinvesting back in their soils.

Now in the cotton growing areas of Mali, which are in, albeit, a better rainfall area, 95% now of the soil nutrients are from organic manure. Yet more and more farmers are moving to new systems. Many of you who know the Sahel know that traditionally, soil fertility was provided by transhumance, which is a term used for the nomadic herders who would bring their cattle southward in the winter time after the harvest for their dry season pasturage. And as they came southward, they would go through the farmers fields and they would graze on the crop residues. And at that time, there was a contractual arrangement. The pastoralist got to consume the crop residues and the farmers got the benefit of the manure.

Now, these old systems are breaking down. Many of the areas that the herders used to go to for dry season pasturage are now coming under cultivation. And this is one of the sources of potential conflict in this region. At the same time, more and more farmers want to use their crop residues for their own organic matter in terms of composting rather than allowing somebody else's cattle to come in and eat your crop residues.

And this is again what we see in Kano where about 90% of the soil nutrients come from a combination of manure, which in some cases they buy. So you actually have people now who sell manure. So it has become a commodity that has a value. But it's a combination of manure, crop residues, ash from burnt fires, and lastly, urban waste. So the farmers have seen benefit in getting certain kinds of urban waste which they pick out the bad stuff, leave in the good stuff and it's combined to form various kinds of compost. So, farmers learning how to use urban waste in terms of refertilizing their fields is another new phenomenon.

Now, the other thing that is happening as a result of all of this mobility and these multiple survival strategies that families practice where they send some children off to the cities, is that there is an element of risk there as well because there are two times during the season where you need every available pair of hands on the farm and primarily that's at weeding time. And it's very interesting, many of you have lived in the Sahel, and I know one of your colleagues has, that they send out messages on rural radio that it's weeding time. And you have about two weeks in order to get the weeds out of your millet. By this time your millet and sorghum is about THIS high, and the weeds may be about THAT high. And if you don't get the weeds out within

two weeks, your crop is finished.

I think it's terribly important to understand that the high population growth rate, which of course everyone is concerned about, you're not going to bring those population growth rates down until farming systems change so they are no longer dependent on family labor. For those people that are still farming extensively, that are still more remote from the market, how many units of family labor you have are absolutely critical for your survival, whereas in closer proximity to the cities in what I call peri-urban agriculture, we do see already less dependence on family labor and you see a more rapid adoption of family planning by families that are living in proximity to the cities.

Conclusion is that if you want to have an impact on family size and reduce the rate of population growth, there are two important areas: one is farming systems, and the other is women's education. Those two factors alone probably will do more than anything else to reduce the rate of population growth.

Now, in trying to point out that there is a bipolar agriculture going on in the Sahel, it's only to suggest to you that we shouldn't overgeneralize about how to approach agriculture. Even in telling you that there are two agricultures at play here, I am overgeneralizing, because in many areas there are specific issues. If you look at the peanut basin, the groundnut basin, in Senegal, this is an area which has been productive but was overcropped, lost a lot of soil nutrients. On the other hand, if you look at parts of southern Mali and southern Burkina Faso, you don't have that situation. And one of the problems that governments had early on is that they tried to apply universal agricultural policies and universal agricultural approaches to their whole territory. After all, this was part of being a nation. You had a universal policy for your whole country. And they were finding out that in many cases these didn't work. For instance, in some countries they decided that the poorest farmers needed agricultural subsidies in the form of fertilizer subsidies only to find out that what happened is that many middlemen bought the fertilizers, hoarded them until the prices went up, then made big profits on the fertilizers. So that it was not the poor farmers that benefited. It was entrepreneurs who used the situation to increase their profits. So these kinds of universal, nationwide approaches are fraught with problems.

I have put this particular slide up here just to show you the proliferation of cities and towns of significant size. In 1990, there were 2,500 towns in the Sahel. That's in the present time. And by the year 2020, there will be 6,000 towns. Now, when I say town, we are using any market center of over 5,000 people where you can see an active agricultural market where people are coming in to actually market their produce. And this is what's going to continue to change

agriculture.

Let me conclude by saying that perhaps the greatest difficulty now in the coming years is for us to design our projects to accompany change rather than to stimulate change. In looking back at twenty years of aid projects to the Sahel, there were far too many projects that came in with preconceived ideas. And it doesn't matter if it was USAID or UNDP or FAO, or so on, you always had some wonderfully dedicated intelligent people sitting back in their headquarters thinking up projects. And then they would take a field mission, they would come out, they would discuss the project with the farmers. And of course, poor farmers are never going to say no to a project because they know a project comes with money. So usually they would say yes and the project would go ahead. But in many cases, these projects did not necessarily recognize the changes that were already taking place in the societies. They did not recognize the multiple strategies that people have for avoidance of risk. They didn't recognize the multiple strategies they had for non-farm employment, for non-farm activities that would bring the family income. What this suggests is that all of us, even the French who think they know this region very well, I can assure you that we still don't totally have the appreciation for what people in the villages and the farmers are really doing.

I tend to be very much of an optimist on Africa and you can probably tell that already. I don't know if many of you know the work of Robert Putnam at Harvard. He has developed a theory of social capital. And he puts a value on social capital the same way we would put a value on financial capital or land capital or labor. And social capital he defines as the degree of interconnectedness within a society. And you measure that in many, many ways, like how involved parents are in the schools of their communities, how involved families are in the health programs of their communities, how much people volunteer to do things on a voluntary basis. And Mr. Putnam concludes that despite all of our great wealth in the United States, we have a very, very serious decline of social capital, which he would say is a real long term threat to the viability of an economy. On the other hand, he would conclude that Africa is probably very rich in social capital as of yet still undeveloped. But this high degree of social cohesiveness, this high degree of family interconnectedness, of community inter-connectedness, is still an enormously valuable asset to Africa. So if I were to give you one word of advice, it's to understand better the changes that are taking place, and understand better the power of community management of activities. We have recently done some case studies in non-formal education in the Sahel and have found that where community-based literacy programs started, even in the villages, where you had a community-based literacy program, lots of other things started happening. It seemed that the literacy program was the basic prerequisite for capacity building for decentralization. Now, this is not top-down decentralization, this is bottom-up decentralization

in the sense that it has enabled the communities to move into the vacuum of the state. In many cases, the state could not or would not be able to deliver development, education, agricultural technology, whatever. And what we're finding is where communities created their own literacy program, it seems that once that literacy program took hold, then they started doing other things. They started organizing their own schools, hiring their own teachers, adding buildings onto school rooms, purchasing additional books for the students, building roads, managing roads, organizing cooperatives. So, the importance of non-formal education shouldn't be lost here, as well as coming back to this theory of social capital of Putnam's. And I think that in terms of environmental management, the World Bank has just discovered what they call community management of natural resources. That it's only when you have local communities actively involved in managing natural resources in a way which also provides economic return, then you get conservation, then you get better environmental management. And of course, this is the way that the World Bank is now approaching the preservation of biodiversity in various kinds of species in East Africa is through community management.

So I know it's always not so easy to target projects on community management. Perhaps one of the challenges for JICA in the future is how you link your projects up with what communities are doing, and I had the opportunity just before joining you to learn a bit about a project, I think, in Nepal where you are combining your JICA project with Japanese volunteers as a way of reaching down to this kind of community management.

So I think I will stop there. I have talked long enough. Maybe we can get some questions and a bit of dialogue going here. I didn't cover all of the points in the paper because I figured you had had a chance to read that. Thank you very much.

Q & A

Moderator: Thank you very much. Now I would like to turn to the question-and-answer session. Questioner will be requested to raise their hand, and after being pointed out, mention your name and occupation. Please.

Question 1: I am working at IFIC in JICA as a water resource officer. I have not so long experience in the Sahel region, but I want to ask two questions. The first one is, you mentioned several times about Kano city in Nigeria which gathered so many population from the Sahel area. What is the main cause which enforced the city to be inaudible? The first one.

Mr. Stacy: What is the main cause for the city to be...?

Question 1 continued: ...to become bigger and bigger, and it is stimulus not only for the citizen but also the farmers coming across the borders. And the second one is how can we make out the criteria regarding the attitude of farmers from subsistence farming to market oriented farming? Thank you.

Mr. Stacy: Regarding the growth of the cities, I should have added that the rate of rural urban migration is slowing down now. In other words, there was a period when it was between six and eight percent a year. Now it's down between four and six percent in many areas. So overall the rate is slowing down. As one would expect as the cities become more and more crowded, they have also become less and less attractive.

But as I said earlier, you also have the phenomenon of farmers moving closer to markets. We find more and more farmers who are urban dwellers. So I think one of the bits of advice is, don't create this artificial dichotomy between urban and rural. It's really the inter-exchange. The urban area provides the services and the things that the rural dwellers need. So we have to look at this dynamism of exchange between urban and rural. And I think many donors have made the mistake of artificially separating their urban department from the rural department. Netherlands has just recombined them again a year ago because they realized this was an error.

But why do people come to the cities? There are complicated answers and there are simple answers. The simple answers; they come to the cities to find things they do not have in the villages: coffee houses, television sets, movie theaters. And what you are having now is a situation where some of those things which you could only find in the cities, you now find in the villages and in the small towns. For instance, you have entrepreneurs in the Sahel who have a good Panasonic VCR, they have a collection of videotapes, films, movies, and they travel around to the villages showing them. They set up the television set under a tree. It's battery operated, and they show films and things. So there are ways more and more that the benefits of the information revolution, the benefits of technology...You find villages now which have computers. And very soon, you will have remote villages hooked up to the Internet, where some remote villager will be able to access any library in the world sitting under a tree in Dori in Burkina Faso. And this is not too far away, quite honestly, so that more and more, people in rural areas, people in villages, don't have to go to the city for the things that they want to go to the cities for.

So the last slide shows that in many cases, it's the small towns that are growing faster. It's not everybody running to Abidjan and Lagos. It's the smaller towns that are growing faster,

because there is a quality of life there. And it's also the kind of environment where you can be a town dweller and also be a farmer. Now, in terms of determining the criteria on going from subsistence to commercial agriculture, that's much more difficult. And where farmers have access to credit, and where they do have access to inputs, you will find that they make this transition themselves in many ways as they feel the density of the market. The danger with my hypothesis here on market density and the supply response you get from agriculture is that it assumes that you have continued purchasing power in the cities. So the big question mark...As you know, many of the young people who come to the cities work in the informal sector. You see them selling matches, selling mangos, repairing mobilettes and so on. Now, the economists tell me that the productivity of their labor, even selling matches in the city, is higher than herding goats in the rural countryside. This remains to be proven. Can you continue to expand the purchasing power in the cities necessary to stimulate the production in the rural zones? And that's the big question mark. Or do the cities become more and more like Calcutta, where you have a very large percentage of very poor people who have no purchasing power. That's why I say don't artificially disconnect your urban concerns from your rural concerns.

There must be more questions. I would also be interested in your observations. Some of you may think that I am crazy, and what I said is not necessarily true, so...

I can tell you a good Sahelian proverb. We were talking earlier about coordination, and there is a Wolof proverb that says, "Ten men digging; one man filling; lots of dust; no hole". So they try to capture in this proverb the importance of really working well together. I must say being in the OECD and knowing about the DAC, coordination is still an imperfect art. We haven't yet perfected this art form of coordinating our aid.

Question 2: In the last part in your speech, you talked about social capital. I would like to know the nature of community different by regions, and what do you think about the relation between the nature of the community and social capital? Is there any relations, or there are no relations?

Mr. Stacy: Oh, there would be great variations. And quite honestly, I don't think Professor Putnam has ever commented on Africa. It's just that from what I know of his theories, and what I know of African societies, there is this high degree of social interconnectedness. But obviously, it differs considerably.

You can see it operating say in Kano, between Kano and Maradi, for instance. Here are two cities that have a very dynamic exchange between them across the border. They even have

areas of mutual cooperation across the border. And this cooperation has nothing to do with the central governments. It doesn't go through Abuja. It doesn't go through Niamey. And a lot of this is because of the high degree of social interconnectedness among the Hausa people. So you do see this where the economic behavior and the social behavior of people in this region ignores the official borders. And in some way the behavior of private citizens has long ago been integrated. I am sure that West Africa will be eventually integrated into one single market. But the way that the people ignore the border is quite important. But obviously, the way you would value social capital is different.

Now the negative side of social capital in Africa is the phenomenon we all know, that if somebody in your extended family makes it to the top, he has all of these responsibilities to help out his brothers and cousins, and everybody; to find them jobs, to get them some money, and so on. And this is why you do get a lot of official corruption because it's expected that you would take care of your social group, your village, your extended family. So if you get to become a minister, it's expected that you would provide a health clinic for your village or you would build a road to your village, and so on. So this high degree of social capital also has its negative side, if governments don't obey the rules of government. And some of you may have observed these kinds of practices.

Question 3: In JICA, recently we have placed much emphasis on the strengthening of JICA's activities and NGOs' activities. JICA's theme these days is how to reach the grassroots level. This is one of the recent topics for all of us. I would like to know much about the capacity of NGOs in sub-Saharan areas. I think it's not so easy for us to grasp the capacity, and the positioning of NGOs in that area. Thank you very much.

Mr. Stacy: You raise a very important question and I want to make myself understood here. I am going to draw a distinction between African NGOs, which are international NGOs or PVOs as we call them in America, private voluntary organizations. One of the very positive things going on now, I think it's partly the result of structural adjustment which took the back of the government off some societies, but also because of democracy, you have an explosion of civil society in this region. So you have many, many small African non-governmental organizations, women's groups, cooperatives of various kinds that are forming, that we lump together as civil society. Among these groups, I think there is very substantial capacity to implement projects and to do things at the grassroots.

On the other hand, we have the international PVOs, who many times operate, and the Sahelians are telling me this, that the international PVOs are a part of the problem as well. They

come into the countries with preconceived ideas. Many of them mobilize their money by showing Africa as a disaster. You see advertisements on the television in the United States showing starving babies, showing the worst situation in Africa in order to raise money, so they can go. The Africans resent this terribly. They don't think that this is what their societies are, and they resent very much the behavior of some of these international PVOs.

Some of the PVOs that operate at the grassroots level also want to do their thing. They don't necessarily want to help capacity building of African NGOs. So that's another part of the problem. It's ironic today. I mean I find that many official donors, bilateral donors, are having great reflection about aid effectiveness, how do we do things differently. There is a lot of doubt in aid agencies about...But if you turn to the international PVOs, they are so confident that they know the answer. They are so confident that they can do things the right way. And I wonder. I am not sure that they shouldn't also have some reflections and some doubts also.

But I think this emergence of African grassroots organizations is really the answer. Now, how to reach them? One of the problems, we think, is the project. In USAID, for instance where I worked, even if you want to unblock a thousand dollars, you need a project. So somebody has to sit down and invent a project. Even if you want to take the smallest amount of money out to these rural areas, you need a project framework. And the Dutch government right now is circulating a paper within their ministry called "process programming" as opposed to "project programming". The idea is that they would have very flexible ways of going out to a community, and just giving them a few thousand dollars in cash to facilitate their own planning. No talk of a project. This is just facilitation funds to allow them to meet. And the project will develop from this facilitation. But what they are trying to do in the short term is to nourish the process without talking about a preconceived project. So in theory, what you would eventually get is the thing the World Bank has great difficulty finding, which is local ownership. In theory, you would get an ownership of the project once that project develops.

We in the past, donors, we would not only come in with a preconceived project, we would say, o.k., this project is going to last seven years, and at the end of that seven years, here is going to be the results. And in many cases, the results anticipated were unrealistic. Maybe it would have taken ten or twelve years with less money and you would have achieved the result. In other words, if you had had real ownership of the project from the grassroots, and you allowed the project to take whatever time it needed without any artificial time frame, maybe you would have more results with less money. So there is a great deal of talk now in this thing called aid effectiveness about moving more to process rather than projects.

And then of course, one of the problems, as we mentioned earlier, is that you have so many projects. In some of these countries, they count over eight hundred to a thousand projects on-going in the country. And the ministries of economic planning don't even know how many projects they have, or where they are. So the proliferation of projects also suggests that eventually we need to combine our efforts into programs. In other words, when a country has the right policy framework, when they have a good sector investment program, when they have a really sound set of policies, say for the environmental sector, the World Bank is suggesting we should go the way of sector investment programs in which financial transfers are made based on performance, which if the country performs, then you just transfer resources into their budget. That may reduce the number of projects, but of course in your business at JICA, since you are in the technical cooperation business, you will undoubtedly still have projects. But I would hope that in the future, they would be a part of an overall program framework as well. Those are my only thoughts on the subject for the moment.

Moderator: Any other questions?

Mr. Stacy: We will be sending you soon some of our work on the 20 years of past aid. We had a representative from the Ministry of Foreign Affairs at our meeting in Brussels a week ago, which did a critique of a first draft of our paper. But we will have a very important paper coming out on what we call methods and approaches to aid delivery based on this evaluation of 20 years in the Sahel. It will propose, I think, some changes in methods and procedure which may apply. I think they apply a lot for the European Commission. They may not apply as much for Japan but some of the methods and approaches are part of the problem, we believe. And since ODA is coming down in Africa, and since many of these countries have been highly dependent on aid, maybe too dependent, that this declining ODA is an opportunity to get greater local ownership and greater aid effectiveness. So again, many Sahelians I've talked to tell me they don't mind if aid levels come down, if they can get a different kind of aid, if they can get aid that is more in tune with the changes in the directions they are going. So again, I don't look at declining aid levels with alarm. Thank God Japan is increasing because everyone else is decreasing.

Moderator: If there are no questions, I would like to close the seminar. Thank you very much for giving us a very informative lecture. Thank you very much.

Mr. Stacy: Thank you. My pleasure. If you have any questions on the papers or anything, don't hesitate to write us or contact us in the Club.

資　　料

AGRICULTURAL TRANSFORMATION

IN THE SAHEL

Two preliminary notes

September 1996

OCDE
Organisation de Coopération
et de Développement Economiques

OECD
Organisation for Economic
Co-operation and Development

FOREWORD

This document presents two articles, written during the implementation of the CILSS[1] - Club du Sahel joint program on the analysis of agricultural transformation in the Sahel. The first article gives a summary of the main findings of the program on farmers strategies, their determinants and their evolution over time. The second article identifies 4 main issues in Sahelian rural development and tries to test the magnitude of these issues, the known answers to them, and the various groups which are likely to implement these answers. Both articles have been written by Serge Snrech, administrator in charge the program on agricultural transformation at the Club du Sahel /OECD, and should be considered as reflecting only the author's point of view.

[1] *CILSS : Premanent InterState Committee for Drought Control in the Sahel*

STRUCTURAL CHANGES IN AGRICULTURE IN THE SAHEL AND WEST AFRICAN SAVANNA

Serge Snrech, Club du Sahel

September 1996

1. SOCIETIES UNDERGOING RADICAL CHANGE

Since the end of World War II a number of major phenomena have combined to radically transform West Africa: consistently high population growth (+2.7% p.a.), greater exposure to the rest of the world, and the acquisition of national sovereignty. The West Africa Long Term Perspective Study[2] highlighted some of these changes:

- Between 1960 and 1990, the region's total population grew from 85 to 193 million;
- Economic activity, largely based on commodity exports, developed rapidly along the Gulf of Guinea and, to a lesser extent, in the southern parts of the Sahelian countries;
- With high commodity prices and easy access to loans the newly-independent West African States undertook major expenditures focused on towns;
- People responded to changes in the economy by migrating in large numbers to pioneer farming areas, the more dynamic countries and towns;
- Since the early 1980s, these movements have been sharply cut back as commodity prices collapsed, indebtedness increased and States entered financial crisis. The economic slowdown reduced opportunities linked to urban growth and made the social climate generally harsher;

2. AGRICULTURE RESPONDS TO CHANGES IN SOCIETY

The research team sought to understand the effects on rural areas of rapid development of a consumer and export market. They devised an indicator for that purpose, "market attractiveness", which shows the attraction that urban demand has on the rural areas (Ninnin 1994, fig. 1). Correlation between this indicator and spatialized data on rural population density and farm output was tested.

A. A response strongly affected by market geography

This exercise confirmed that there is a high correlation between market connection and rural population density: The closer an area is to major markets, the higher the rural population density. This was true both in 1960 and 1990, despite radical changes in market geography.
The relationship between market attractiveness and farm output was then studied. Proximity to the market has an ambivalent impact on farm output: both positive (better market information, lower transaction costs) and negative (higher labor costs because of alternative non-farm employment, greater pressure on land because of higher population density). The study shows that the positive impact of the market, taken on average across the region, is greater than the negative impact of higher population density and saturation of land: there is a clear positive correlation between "market attractiveness" as calculated and average farm output per capita.
It would appear then that the basic mechanisms of response to demand operate in the region, and that there is no structural gap between supply and demand.

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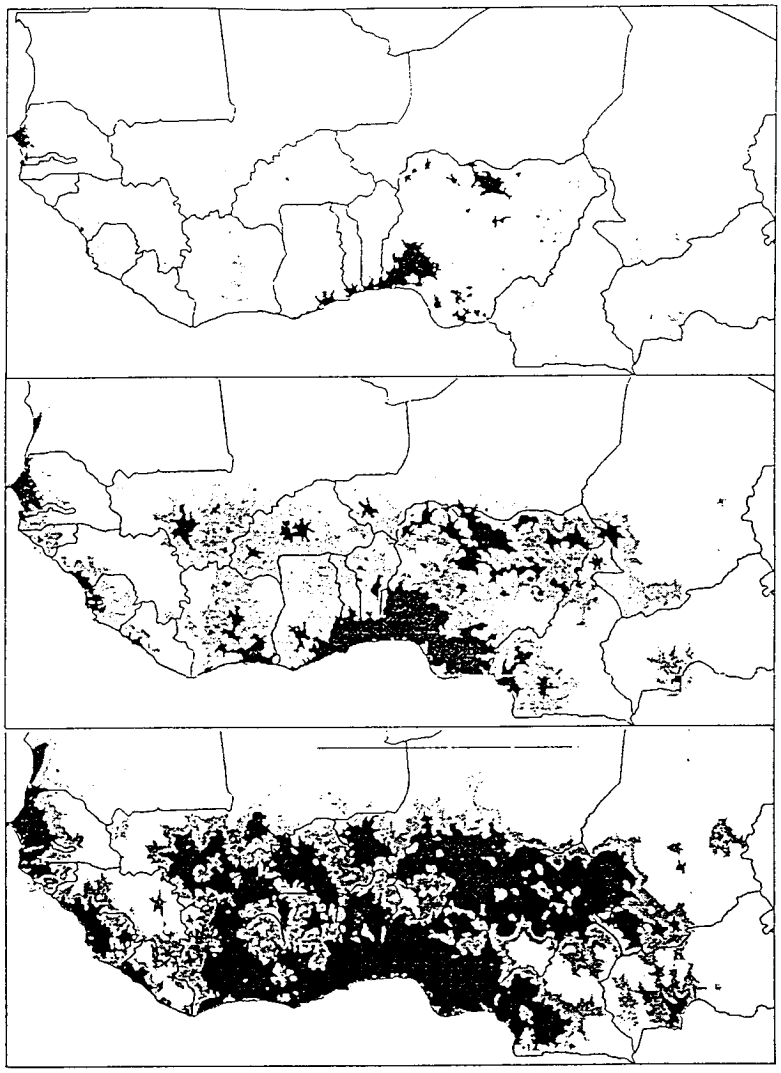
2 *The West Africa Long Term Perspective Study (WALTPS) was carried out in cooperation between the Club du Sahel (OECD), CILSS and the African Development Bank. It covers 19 countries in West and Central Africa: Benin, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Chad, Côte d'Ivoire, The Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone and Togo.*

fig.1: market attractiveness in West Africa : 1960, 1990 and 2020 forecast[3]

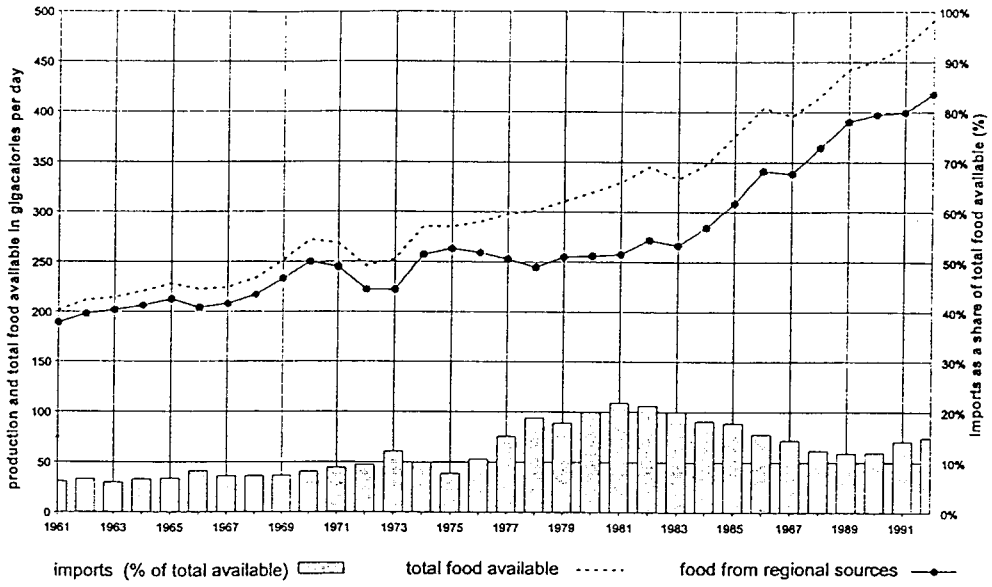


B. A time-lag that peaked in the early 1980s

The difference observed between production and consumption is rather to be seen as a time-lag in the response to a demand experiencing rapid change, both quantitatively and qualitatively. This time-lag peaked in the early 1980s, under the combined effect of a number of concordant factors: explosion in urban growth, bad weather, high export commodity prices encouraging expansion of these products while imported food prices declined as a result of growing surpluses in developed countries, easy access to credit, substantial contribution to public budgets from import taxes and ineffective national food policies. The time-lag has shrunk considerably since then, as most of these factors have been reversed (fig. 2).

[3] *Market attractiveness is the virtual price at any point in a rural area of a basket of farm products representative of the region. This price is based on an equilibrium price calculated from a spatial economic model applied to 800 towns in the region taken as centers of transit for export goods and of final consumption for food crops. The price in rural areas is obtained by subtracting from the price in the nearest urban center the transport costs to that center, based on the distance weighted by a factor for infrastructure quality. The hypotheses adopted as to the effects of supply were highly conservative, and tend to underestimate the result obtained.*

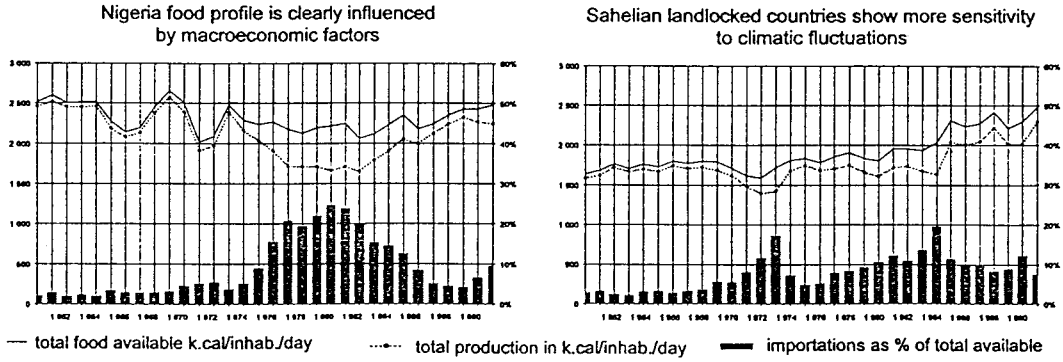
fig. 2: long term evolution of regional food production and availability and imports as a share of total food available.



Sources: FAOSTAT for agro-food data - WALTPS for demographic data

This turn-round is particularly striking in Nigeria, where macro-economic factors have the greatest effect ("Dutch disease" in the 1970s when oil income boomed, cut-back in imports with the financial crisis of the mid-1980s), whereas in the landlocked Sahelian countries the weather is more important. In these countries, per capita output has increased, together with imports helping to improve the daily ration, which was particularly low at the beginning of the study period (fig. 3).

fig. 3 : diverse evolutions: food profile of Nigeria ans Sahelian landlocked countries



3. RATIONAL STRATEGIES FROM THE FARMER'S POINT OF VIEW

The Club du Sahel has reviewed the information available on farmers' strategies and behavior in a variety of environments, in order to understand the mechanisms of farm supply and how it might

be stimulated. This bibliographic review shows that when farmers' behavior is seen against its economic, social and ecological background, with its opportunities, threats and constraints, that behavior is usually perfectly logical (and thus hard to change without altering the environment).

A. A dual strategy

The research reveals the two components in farmers' strategies:

- Priority is given to safeguarding the family and its means of survival in the long-term, implying high risk-aversion: low capital investment, diversification of activity, etc.
- The desire to maximize the economic and social value obtained from available resources (land, capital, labor), behavior that is better understood and described by economists, favoring gradual economic specialization to acquire or optimize comparative advantage.

B. Subsistence strategies still predominate

In practice, since most farms are poor and only just above self-sufficiency, minimizing risk often comes before making optimal use of resources. In particular, most rural dwellers continue to produce the bulk of their own consumption, seen as an essential element in ensuring family security, with production costs that would appear abnormal from a purely market-based point of view.

> *The production cost of rice, for example, grown (and stored for years) in the villages of Casamance (including help from out-migrants to Dakar who come back to the village during the rainy season) is estimated to be over five times the market price if one takes all costs into consideration (transport and lost wages of out-migrants, capital tied up in storage, etc.). [Caputo on Casamance, Senegal.]*

This is also true to some extent for town-dwellers: food production in towns, albeit rarely and poorly measured, appears to be substantial, as is shown by the few studies on the topic.
Most farmers therefore produce primarily for their own needs and only sell their produce when forced to (to refund debts, buy healthcare for a member of the family, finance an emigrant, etc.). Since sales are determined by need, they appear to be anti-economic: the lower prices are, the more must be sold to reach the desired amount.

> *[In the Ségou region] for grain sales, farm production units usually take no account of the level of market prices, except if the harvest is particularly good and self-sufficiency easily covered... Sales are rather a function of the urgency of cash needs to be met and are not necessarily surpluses over and above home consumption. [Coulibaly on Mali.]*

The food crop market is still dominated by a host of marginal players, especially in the grain market; it is, therefore, structurally volatile and unremunerative and a disincentive for economic speculation:

> *As for the dependent men [who owe work to the farmer, but cultivate a private field on the side to earn money], 80% state that they only consider grain crops if groundnut seeds are really short. One-third would prefer not to farm at all if only grain could be grown. . . . Millet is grown on average one year in three by those farmers who have no responsibility for feeding a family. [Gaye on the Senegal groundnut basin.]*

C. Crops grown for market only develop if they are profitable

Most rural dwellers, therefore, have preferred to diversify their activities rather than increase their food output to achieve surpluses, since their crops are only intended to cover all or part of family needs:

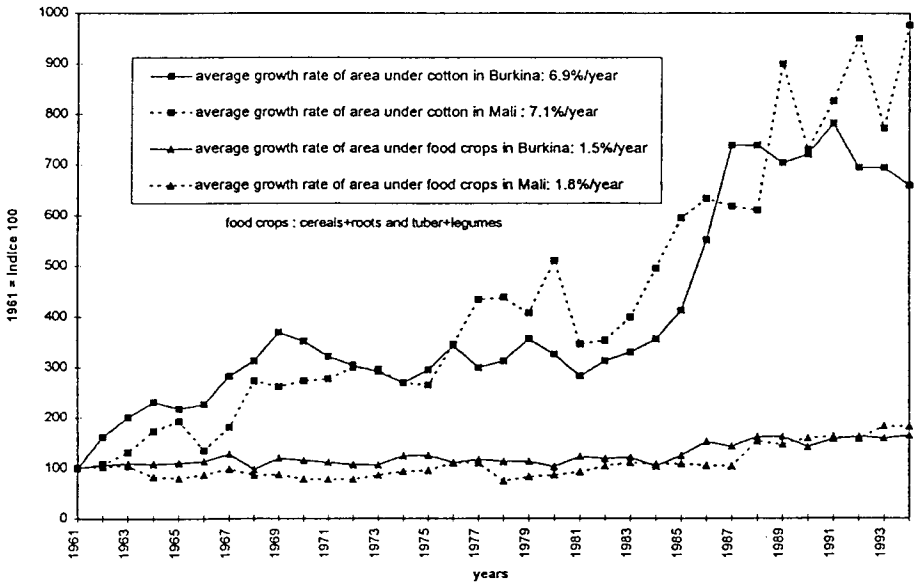
> *Using new time-saving animal traction technologies, rural households have realized that they can do the same work in less time and thus release labor for work elsewhere. (...) Given the new external conditions, farmers' keenest interest has become the production of the same amount of food and the release of the family's labor force to pursue opportunities elsewhere. [DeCosse on The Gambia.]*

This strategy has been encouraged by the rapid development of non-farm activities associated with local trade (processing farm produce, crafts) and urban development (trade, migration, etc.).

> *Surveys available for Africa as a whole show that non-farm income is 25–30% of total income in the household studied... Surveys for the Sahelian countries (6, plus 2 for northern Nigeria) in the 1980s show that off-farm income varies from 20% to 64% of total income (average 39%). [Reardon 1994 on the Sahel.]*

But this does not mean that rural dwellers are systematically abandoning farming. Wherever possible, they have grown export crops which have profitable and guaranteed outlets and easy supply of inputs. Export crops have therefore expanded considerably in a number of countries, while food production developed slowly (fig. 4).

fig.4: growth rates of areas under food crops and cotton in Burkina Faso and Mali



> *There are big incentives for farmers to expand peanut production -- even before the recent devaluation of the FCFA, land returns for peanuts were 1.6 times, and labor returns 1.4 times, those for cereals. Devaluation has further increased the profitability advantage of peanuts and we find farmers shifting from millet back to peanuts. [Kelly 1995 on Senegal.]*

In practice, it is only when they have reliable access to food markets, where outlets are sufficiently regular and profitable, that rural dwellers develop real strategies of commercial farming of food surpluses:

> *The farmer's behavior behind the increase in the food produced for the market is not different from what led to the expansion of export farming: crops develop in so far as they provide a reasonable reward for work. [Chaléard on Côte d'Ivoire.]*

> *Over 35 villages within 35 km south of the town refuse to plant cotton, and yet supply the town, indeed other urban centers, with impressive amounts of sweet potatoes, cassava, potatoes, pineapples, Bambara groundnuts, bananas, etc. [Sanogo on the Sikasso region in Mali.]*

In the region's most urbanized countries (Côte d'Ivoire and Nigeria), cash food crops have developed on a larger scale, involving various economic agents:

> *Traders have played a very important role in stimulating the maize supply. Apart from concluding informal contracts with farmers, they have also invested directly in maize production by employing hired labor. [Fusillier on Côte d'Ivoire.]*

D. Initially extensive farming becomes intensive in response to constraints

While available land is plentiful, farming develops primarily by extending the areas under cultivation, which is more cost-effective than any type of intensification. The reason is that low-intensity farming over wide areas maximizes the use of natural resources and saves capital and labor.

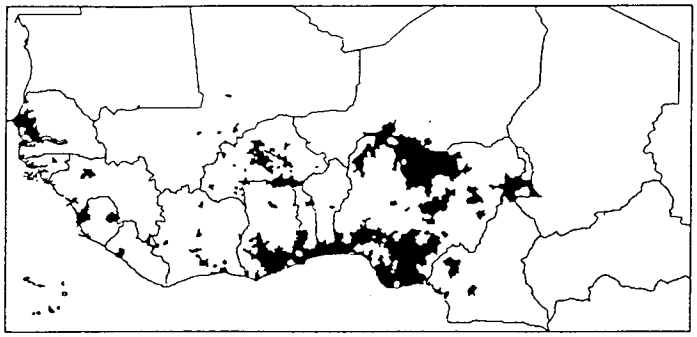
> *Buying plowing equipment, and its corollary the extensive development of cotton-planted area are the most profitable and least risky way for farmers to increase their income as long as farmland is still available. [Van der Pol on southern Mali.]*

This extensive strategy takes various shapes according to the farming system:

- In systems dominated by subsistence strategies, areas under cultivation increase at the same rate as the consumption needs of the farm, i.e. at the rate of population growth, roughly 0.4–0.6 hectares per worker.
- In systems exposed to the market, some farmers acquire the means to improve their labor productivity so as to produce surpluses to market (increased use of animal traction, hired labor for peak periods, fertilizer and pesticides to improve yields, etc.). The result of this response to the market is that in these regions the areas under cultivation expand faster than the population grows.

The « extensive » farming, maximizing the consumption of natural resources, assumes that plenty of spare land is available, because it takes three or four years' fallow for one year's cropping to return to satisfactory soil fertility. This means that at population densities of some 50 per sq. km the system reaches a degree of saturation beyond which the fallow is too short to restore fertility and extensive farming begins to exhaust the soil. Saturation levels are even reached at much lower densities when the soil is of poor quality.

fig. n° 1 : areas of rural population density over 50 inhab./km^2
7% of total regional spaceonly, but almost 40 % of total rural population



There are two ways of reducing losses due to extensive farming:

- Control erosion and maximize the biological and chemical processes that renew natural resources. This means investing primarily in labor (reshaping fields, producing manure or compost, better integration of crops, trees and livestock).
- Introduce minerals (fertilizer) or organic matter (urban refuse) to make up for deficiencies in local resources; this usually implies capital investment.
-

The various types of intensification found in the region represent different combinations (rarely exclusive) of these technical solutions in varying proportions.

E. Specialization begins according to the assets and constraints of each zone

Technical change is usually a coherent response to variations in a number of parameters, including access to land, markets, techniques and the financing needed to use them, or the economic and climatic risks of one form of farming rather than another.
The variability of these parameters in space determines the wide variety of systems, differing both in internal dynamics and relationship to the market.

> *For example, the most labor-intensive and fragile food (vegetables, fruit, small livestock, dairy produce) is grown in the densely populated peri-urban ring around major cities. Farmers deeply integrated into the market buy and sell regularly; they supplement their income with non-farm activities (trade, food processing, urban jobs).*

Generally, farmers in peri-urban areas are greatly attached to the farming part of their income and only give up land tenure rights as a last resort; this leads to considerable fragmentation of land. However, nationalization and redistribution of land by the State, along with the development of a market in land, makes it possible for a few powerful entrepreneurs to form large estates near towns, combining advantages of proximity with economies of scale thus substantially augmenting their earnings.

> *Fixed capital, other than that created by labor (such as granaries, fences, or ditches), is still rare except on farms belonging to wealthy persons (often city residents) (...). Most farmers work with a small assemblage of locally smithed hand implements (...) They cannot acquire either the capital to purchase a plow team or the land necessary to make its operation economic (...).. By no means new in the Kano Close Settle Zone, capitalist farmers are*

increasing in number as part of a general trend in northern Nigeria (...), attracted by rising food prices and land values and by the ease of acquiring land under customary tenure by privileged persons. [Mortimore on the Kano area in Nigeria.]

Except for these few large peri-urban estates, the products which benefit from economies of scale tend to be grown outside the dense peri-urban ring, where there is less pressure on land, and on a few farms that are usually bigger and more capitalized than average. These farms are better at managing the intensive methods required to produce surpluses, especially for cereals, which may be grown with cotton.

Except in Côte d'Ivoire (...), maize yields rise significantly with the level of mechanization. The relationship is not a straightforward one, since the most mechanized farms are also the richest, and may well use more inputs per hectare (although Faure's data do not confirm this). Mechanization certainly makes it possible to farm better (keeping to the optimal cropping calendar (...) , sowing at the right density), a major factor in yields. One might also suppose that mechanized farms have managed to make better use of the maize technical package (...). The gap in yields between manual and mechanized farming grew considerably between surveys at the start and end of the 1980s. [Fusillier 1994 on maize in West Africa.]

In theory, smallholder yields should be close to those of commercial farmers. The seed variety and fertilizer regimes recommended by the extension services are effectively the same "high-tech" regimes as those practiced by the large farms. Even when applied with no more machinery than a hand hoe, they can result in the same 5 ton-plus yields. In practice, however, the average yield of maize in the smallholder sector is little more than 2 tons per hectare. A major reason for the discrepancy is the lack of finance, as equity or credit, to procure sufficient fertilizer for the whole area planted. Other major reasons relates to timeline -- land preparation, planting, fertilizer application and weeding. Hybrid maize is extremely sensitive to time of planting in Zambia -- losing 5-10 percent of its yield potential for every week that planting is delayed beyond the recommended planting window for the variety and region in question. Yields also drop sharply if the farmer is unable to keep on top of weed growth. [Scott 1995 on Zambia.]

The total average cost of producing a 100-kg bag of maize decreased drastically with increase in farm size from 113 naira in small-scale category to 44 naira in the large-scale farms. The small-scale farmers had the highest cost of production per hectare. However, they were observed to experience different prices for both inputs and outputs, compared to the large-scale farmers. [Ilu 1994 on the Kaduna region in northern Nigeria.]

As the value of products rises, so transport costs become less important and production costs more so. This is particularly true for livestock where Sahelian countries, despite being landlocked, have much clearer comparative advantages over the coastal countries than in cereals.

Some zones identify product niches that enable them to make best use of their specific conditions and counterbalance their remoteness. These niches are often associated with particular ecological conditions, where crops can be farmed that will not grow near the final markets (such as onions grown in the Sahel for the coastal countries) or can be grown out of season compared with farmers nearer the markets (such as early yams from northern Côte d'Ivoire for the Abidjan market)

Integration into the market and the greater amount of technical inputs bought from some of the crop proceeds may counterbalance adverse climate:

Given the right set of conditions (e.g. infrastructure, population density, employment opportunities, technologies), areas labeled as "low potential" can be as productive as the higher potential areas. "Low potential" may be a misnomer. Returns to land and labor are highest in the higher potential region and the lower rainfall, high infrastructure region. . . . Preliminary statistical analysis indicates that the level of overall infrastructure and the presence of a weekly market have a significant positive effect on input use and productivity. Returns to land and labor in the Soudano-Guinean zone are 25 to 65% higher for households in village with markets or well-developed infrastructure. Input expenditure is 4Ð6 times higher. Areas with high non-farm income shares that are not accompanied by a high level of infrastructure do not have the same productivity gains. The role of commercialization is still the key. [Hopkins 1994 on Niger.]

However, many zones and individual farms continue to have no access to the market, because of their relative remoteness and the small size of the overall market to share among farmers: better run or better placed farms can meet the solvent demand for these products. These zones continue to be oriented mainly towards home consumption, with varying degrees of economic diversification, often via migration. The same reasons that prevent the people in these zones from selling their produce mean that they generally have few opportunities for local non-farm work.

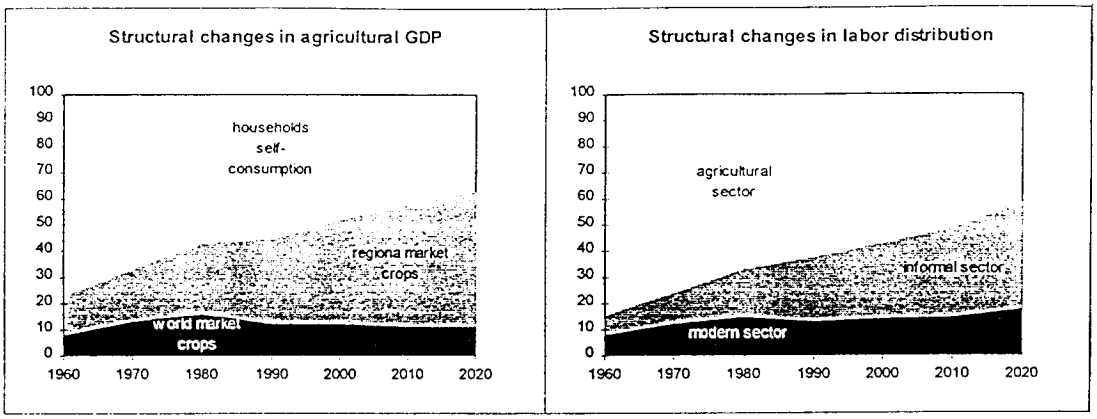
F. Medium-term trends are likely to increase specialization

What are the likely medium-term trends in agriculture? Although the speed of change is hard to predict, the following changes are highly probable, and will necessarily affect the functioning of rural areas:

- A gradual saturation of land resources, as rural population density increases and farm equipment becomes more common, particularly in areas close to markets, and a rush on the last "virgin land" as it is opened up or cleared of disease.
- An increasing proportion of town-dwellers, due to rise from 40% to over 60% of the population by 2020, and from 30% to roughly 50% in the CILSS countries. The increase in the share of farm output brought to market—over half by 2020—will help to make markets more stable and predictable. Market rationale will thus gradually take over from the currently dominant rationale of family home consumption.
- A development of the domestic market: increase in opportunities for trade, and the growing organization of economic agents to make the most of them, will likely improve the conditions of trade: better infrastructure, fewer taxes and informal controls, faster and cheaper transport can be expected to result from the development of regional trade. If this occurs, it will help reduce the geographical rent that is now dominant by extending the supply areas of the major cities.

These changes will probably mean the development of more fluid and stable markets in which competition will be fairly fierce. As markets increase both in area and as a proportion of total output, so economic risks should become lower, making possible slimmer profit margins: the price of food will tend to fall. In these conditions, comparative advantages associated with ecological features or production patterns will have a growing impact and gradually take over market location: the specialization by regions and/or by products that can just be seen emerging in Côte d'Ivoire and Nigeria may develop and increase throughout the region.

fig. n°6: long term structural change in West-Africa



4. THE DIFFICULT TASK OF MANAGING THE TRANSITION FROM SUBSISTENCE TO MARKET ECONOMY

Analysis of farmers' practices shows that changes in rural societies echo more general change in West African societies. Although the old rules still have a strong hold, rural society is undeniably shifting from a society dominated by a subsistence paradygm to one driven by the market economy. The technical, economic and social operations of the old farming systems are being undermined and forced to adapt to changes in individual behavior.

A. Changes in technical rationality

As the market economy expands into rural areas, the production factors become more diverse and increasingly based on cash. A market develops in land, in labor, in the supply of farm machinery (such as tractors), causing farmers to make often subtle decisions between the technical opportunities they are presented with:

> *With population growth, expansion for the market, and the renting of tractors, small-scale farming is beginning to precipitate into two types of rotation. Labor-extensive and relatively cheap cultivation methods are applied to tractor-cleared fields, sown in a limited range of crops, more densely planted, and fertilized at least once over the four years, then kept in cultivation longer. Labor-intensive and more expensive methods are applied to hand-cleared fields, and these are kept on the old cycle of fallow. It is worth noting here that it is not the tractor fields but the hand-cleared fields that are at the cutting edge of crop innovation: the maize and egusi planted on tractor plots are old staples of the system that have both slightly declined in the proportions of farmland devoted to them since 1968, whereas the most rapidly expanding crops -- tomatoes and peppers -- are almost exclusively grown on hand-cleared plots. Both types of innovation are proceeding at once: land use innovation with old crops and crop innovation with old land-use techniques. . . . the constant stimulant provided by an active market for varied products and the need to calculate labor costs keeps experimentation very active (Guyer on the region of Ibandan, southern Nigeria).*

Technical solutions for maintaining soil fertility are increasing in number and being paid for: manure contracts between farmers and herders are giving way to more accurate management of the synergy between crops and livestock on the same farm, night parks and manure and compost production.

In the cotton-growing area of Mali, in the oldest zones where farming is most intensive, nearly 90% of farms produce organic manure. In the Bougouni region, the most extensive, despite the abundance of free land for livestock, only 35% of farms on average use any form of manure. And yet, in this area, over 80% of the richest farms already use organic manure. [Giraudy on Mali.]

Made from mixing penned livestock dung with ash, uneaten crop residue, and domestic waste, [the farmyard manure] is distributed to the fields by donkeys, cart, or (recently) by motor pickups, and placed by hand around the growing stands. This work is labor intensive. . . . Supply is limited by the size of the livestock holdings; those who can afford to, purchase manure. Because this may contain much unwanted city refuse, still more labor must be given to sorting it and burning it. Neither the rising price of manure nor the value (opportunity cost) of labor have deterred farmers from continuing to invest heavily in this form of land improvement. [Mortimore on the Kano region.]

These technical changes are not guided by the tools available, but rather it is circumstances that guide the choice and use of the tools. Depending on the case, the same plow may be used to extend farmland where land is plentiful, to speed up sowing and increase weeding in drought prone areas or to reduce the time spent farming so as to diversify economically. The different needs in different regions and different types of household are arguments for offering a wider range of tools and technical solutions for farmers, rather than one-size-fits-all solutions. This in turn presupposes shifting the role of the extension worker to that of advisor for farmers.

B. Radical changes in social rationality

The family, the basic institution in farming, has always been faced with the difficulty of getting its useful hands to return to the farm during the crop season. Its control over crucial stages in family life (marriage, old age) has enabled the family to maintain its authority over the young labor force:

In Dukolumba, a key preoccupation of most compound heads is guaranteeing the return of male youths from their wage-labor employment (usually in the Ivory Coast) for the two-month weeding season (July to August) of the farming year. Given that these wages offer a better exchangeable return on labor than anything they could farm, I find the reason for compound heads' success in this endeavor particularly intriguing. [Lewis on northern Mali.]

However, families are being increasingly forced to compromise with market forces, or risk seeing large farms break up:

To retain family labor, some farmers are sometimes forced to hand over some of their own groundnut seeds to their dependents, and fall back on other crops. [Gaye on the Senegal groundnut basin.]

Generation conflict also shows in the frequent break-up of the farms of large families.

(...) The break-up of farms points up management difficulties within enterprises. Intensification and the efficient use of inputs require more organizational skills on farms. Decisions about the distribution of inputs and labor between various plots are a cause of conflict, particularly between young and old. There are also tensions about payment for different activities. This affects the adoption of fertilizer techniques. For the younger members of the farm, the FCFA 10–20,000 they receive at the end of the cotton campaign

does not encourage them to spend much time preparing penned livestock dung. For women, it is even worse. They are usually the ones who prepare compost, which is the most used organic manure. At the end of the cotton campaign, they only get FCFA 2–5,000. (Van der Pol on the Mali cotton-growing area.]

These increasingly reserved relations within farms are accompanied by similar relations between farms, some of which are becoming marginalized:

Where useful farmland is gradually being saturated, the control of land becomes crucial . . . Farmers with small acreage are faced with serious problems in the hunger gap, particularly after two or three years of deficit. To fill the deficit, they are forced to sell their labor during the cropping season, thus cutting the time spent on their own farm. In this way a growing gap occurs between those farms with capital in land and cash, who hire labor, and farmers in crisis, who may sell their land or even leave their village permanently. [Lericollais on the Maradi region in Niger.]

According to the survey results, roughly 30% of the farmers polled use plowing equipment from other farms. These farmers are more numerous in the Fana and Sikasso regions(...). The use of external equipment is either free (roughly 40% of cases), or in exchange for labor (another 40%), or cash or kind (roughly 20%)(...) . The use of equipment in exchange for labor is often a feature of farms slipping into poverty. Through working on other farms, the farmer is late with the work on his own farm and sees his yields decline. The result is that his revenues and self-sufficiency are no longer guaranteed. The farmer cannot therefore buy equipment and the vicious circle begins again. [Niang on southern Mali.]

Signs of a nascent rural proletariat can thus be witnessed, not only as a result of the natural environment, but of the very functioning of society. Faced with this structural proletarization, traditional solidarity seems to have little to provide. Solidarity is shown more in times of crisis than between different social groups, which existed any way before the market economy was developed:

[Surveys] show that transfers between households are tiny and far less important than off-farm activities and livestock farming as ways of getting through the hunger gap. This contradicts the generally accepted idea that inter-household transfers form a substantial "network of social insurance" in African villages. [Reardon.]

This implies that it would probably be best to encourage the development of specific job niches (labor-intensive and requiring little capital) for this category of household.

C. The difficult task of managing differing situations and rationales

Every Sahelian country without exception is now a mosaic of widely varying situations:

- Some groups of farmers have managed to acquire the skills, tools and capital to respond quickly and effectively to the varying opportunities in the market.

  Finally, the large cotton producers . . . constitute the group of farmers that is best capable of implementing the desired type of intensification. This intensification implies an increased dependency on resources external to the farming system and hence the number of factors that the farmer cannot control, which increases risk. This group of farmers is also best capable of rapid changes in production strategy because of their large financial, labor and animal traction resources. [Beckmoes 1988 on Mali.]

Labor marginal productivity (MPs) in the traction group do not differ much among crops . Approximate constancy across products suggests that the farm households allocate labor in an economically rational fashion. This rationality may be aided by the greater resource-allocation flexibility that traction affords. But in the manual group, labor MPs are not close to one another (millet is close to cotton and maize is close to sorghum; together cotton and maize labor MPs are twice as many as those for millet and sorghum). The average MP in the traction group (33 FCFA/hour) is above that in the manual group (20), as traction is labor-augmenting. [Ouédraogo on the Burkina cotton-growing area.]

- Conversely, other groups have not managed to get that far, either by not having access to the market, or by not being able to take advantage of market opportunities, or by developing non-farm strategies rather than growing surpluses.

These two groups can be found in every region with the balance between them varying as a function of economic and social characteristics of the region. This wide variety among farmers clearly raises management problems for national policymakers.

The newly-independent African States, in their desire to build nations, sought to have laws applicable to the whole territory and population, although needs were quite different according to circumstances. The result has been unequal effects in different areas, sometimes speeding change and sometimes hampering it. However, there are few cases of public action radically altering developing trends.

The introduction of rural communities is responsible for the disappearance of fallow land after 1973. Out of all the clauses in the law on national property, the farmers only picked up the idea of "vacant land": they would lose the use of land that was not being farmed, and it would be redistributed to other people by the rural communities. Each farmer, therefore, recovered the plots that were due to be left fallow in 1973, and all land was farmed. [Gastellu on Senegal.]

[In northern Nigeria] a survey showed that the poorest farmers could not afford to buy mineral fertilizer because of its high price. The decision was therefore taken to subsidize these fertilizers. But, although the subsidy was in theory beneficial for small farmers growing mainly for home consumption, it was even more so for the people already in the input market: large farmers and traders. Consequently, some of the subsidized fertilizer slipped over the border to Niger, enabling a few traders to make a substantial profit, and the rest was used by the wealthier farmers. Since the subsidies only applied to limited quantities, fertilizer became short on the "free" market, supply uncertain, and the price higher. Altogether, the position of the poorest farmers became even more tenuous, and social differentiation was probably accelerated by this measure.

The inappropriateness of particular "uniform" measures is now generally admitted, e.g. an official single price for food, which could never be enforced and have considerably distorted the food market. When simple solutions do not work out , one is the tempted to depend entirely on market forces or decisions of local authorities. However, these mechanisms also have their limits and excesses as local authorities have their political preferences and can abuse their power. It is only a trade-off between market forces, local and national regulations that makes it possible to find solutions acceptable for most people.

5. ACCOMPANYING CHANGE

The trends in agriculture described above are not necessarily inevitable, but they are the most likely response to changes in the farming environment. Economic and agricultural policy must be more effective in forecasting and allow for predictable changes. Otherwise, some problems will have totally changed before policy solutions become operational. New opportunities will also arise which policymakers must be prepared to make the best of.

A. Developing a long-term vision and effective information

The increasing opening-up of West African agriculture to the market implies that any action taken in this field must be based on a long-term vision of trends in the farming environment, itself changing rapidly (changing markets for land, capital, labor, commodities, technologies, etc.).
The idea of evenly spread, fair progress, satisfying all farmers and all regions at once, seems to be contradicted by the experience of those countries where the changes in agriculture are the most advanced: the development of market opportunities and the need to cope with the increasing saturation of natural resources lead to an explosive growth of initiatives, but also to greater social and geographical differentiation. The national statistics used in defining farm policy do not take account of this greater differentiation in rural areas, and some way must be found to remedy this shortcoming.

B. Pragmatism, flexibility and continuity in policy

Policy must take account of the problems of the poorest farmers, but should not stop the most dynamic farmers from producing the surpluses needed to feed cities and deficit regions. These farmers will only devote greater effort to agriculture if they can obtain rewards for their resources and skills, that are competitive with the increasing number of alternatives outside rural areas. This is particularly true for sustainable agriculture, which requires more technology, more capital and more skills.

With varied and increasingly complex rural areas, the capacity of rural groups to select innovations suited to their needs must be developed. This capacity already exists in practice but its development must be encouraged. This means, in particular

- not setting farm and rural development against other sources of growth: economic diversification remains a high priority for rural dwellers, who will invest more wisely in farming if they have alternative sources of income that enable them to spread their risks
- widening the range of techniques from which farmers can choose to meet their problems and ambitions: selection of biological and technical material, information, distribution and supply of these tools
- limiting risks on the farm produce markets in order to encourage innovation

Careful thought must be given to measures enabling weaker groups to improve their medium-term position despite considerable short-term constraints. Since these groups are particularly vulnerable, it is even more important for them (as opposed to other groups) to take action over a long period of time and to help them have a better grip on their environment (natural, economic and institutional).
It is against this background of varied and competitive rural areas that the problem of social support for the poorest must be addressed. Questions need to be asked about existing means of redistribution between rich and poor groups and areas (wages, taxes, etc.) and how they may change in time.

THE CHALLENGES OF RURAL DEVELOPMENT IN THE SAHELIAN COUNTRIES

1. Rural development in the Sahel: contrasting issues

2. Analysis of three practical challenges of rural development in the Sahel

A. Supporting the arid zones

B. The battle against extreme rural poverty

C. Stimulating the contribution of agriculture to the economy

D. Synergies and conflicts among the three challenges of rural development in the Sahel

3. What form of mediation between the rural world and the international community?

A. Governments, administrative bodies, and parapublic agencies

B. Market mechanisms

C. Scientists and other producers of knowledge

D. NGOs

E. Local collectives

F. Professional agricultural organizations

G. An eminently political problem

4. The implications for interventions in rural development

A. Help the various national interest groups negotiate among themselves rural development priorities

B. Offer long term support to the most vulnerable regions and groups

C. Promote the dynamic elements that create wealth and jobs

1. RURAL DEVELOPMENT IN THE SAHEL[4]: CONTRASTING ISSUES

For twenty years, rural Sahel has attracted sustained attention from the international community. However, the reasons why national and foreign participants have focused their attention on the rural world, the regions in which they have intervened, and their methods differ widely. This is due to the size and diversity of the rural sector in the Sahel and its multifaceted contribution to the development process.

Based on recent Club du Sahel work, we propose to deal with three important challenges for the rural development of the CILSS countries:

- Confront the aridity and variability of the climate, which preclude the growing of most exportable crops and make the economic outcome of most agricultural intensification practices[5] uncertain below a certain level of rainfall. Most authors agree that this critical level lies between 400 and 800 mm of rainfalls, generally around 600 mm.

- Fight against the extreme destitution of the poorest segment of the rural population which, without access to the physical and other factors of production (land, labor, inputs, capital, markets, knowledge) are regularly forced to consume part of the natural resources on which their survival depends. They are thus trapped in a spiral of resource degradation and impoverishment.

- Ensure, in the medium term, a sustained increase in agricultural production, which would at the same time enable producers to invest in sustainable improvements to their production (maintained soil fertility and agricultural capital formation) and agricultural economies to find the revenues required to finance, at least in part, the necessary economic diversification of Sahelian societies.

We will see in the following section that, behind the responses to these challenges by public interventions and international cooperation, resides another challenge, of a more institutional nature :

- How to optimize the mediation between rural communities and their national and international partners at the "macroscopic"[6] level. In other words, who ensures, under what conditions, at what price, and to what purpose, the links between the extremely concentrated sources of intervention and the 35 million rural Sahelians, who are widely dispersed?

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[4] *By Sahel we mean the nine countries of the CILSS (Burkina Faso, Cape Verde, the Gambia, Guinea-Bissau, Mali, Mauritania, Niger, Senegal, and Chad), which include most of the West African zone of the Sahel, but also portions of the desert and, at the other end, humid zones that are clearly more conducive/favourable to agriculture.*

[5] *Agricultural intensification means increasing the quantity of labour or capital used per unit of cultivated land.*

[6] *In this paper we use the term "macroscopic" to designate rationalities at the national or higher levels – regional Sahelian, West African, or international – as opposed to local rationalities. Although the explicit distinction between rationalities at various levels is made primarily by quantitative economists (microeconomic and macroeconomic), in our opinion it applies to all sectoral approaches to development: one can (should?) thus talk about micro- and macro-ecology, micro- and macro-sociology...*

In the case of the Sahel, the first three problems cover in large part the technical challenges to which we must respond in order to move towards a rural development that is both rapid and sustainable. At the same time, these problems are markedly different in nature, in size, and in the solutions that are called for. We thus propose to explore, in the following pages, first their practical significance and the "solutions" that have been tested so far, before dealing with the potential synergies in implementing these solutions.

In our view, the last problem is different in nature, and especially significant for the future. The third part of the paper is more specifically focused on it.

2. ANALYSIS OF THREE PRACTICAL CHALLENGES OF RURAL DEVELOPMENT IN THE SAHEL

A. Supporting the arid zones

1. Nature and scope of the problem

Aridity is the most obvious and specific problem in Sahelian countries, although it affects these countries to widely variable degrees. Essentially, the problem is climactic: insufficient rainfall that varies considerably in time and space, renders the outcome of rainfed agriculture very uncertain. This aridity has significant economic and social consequences: it discourages investment in agriculture because of uncertain profitability; it encourages migration because of the length of the dry season and the limited employment opportunities.

The definition of the zone where the climactic risk becomes an acutely limiting factor in agriculture seems to vary with each author. It also depends on other conditions, notably the soil. The limits mentioned vary from 400 mm (the threshold below which agriculture becomes highly risky) to 800 mm (the level beyond which the climatic risk, without disappearing, no longer dominates the other problems plaguing Sahelian agriculture).

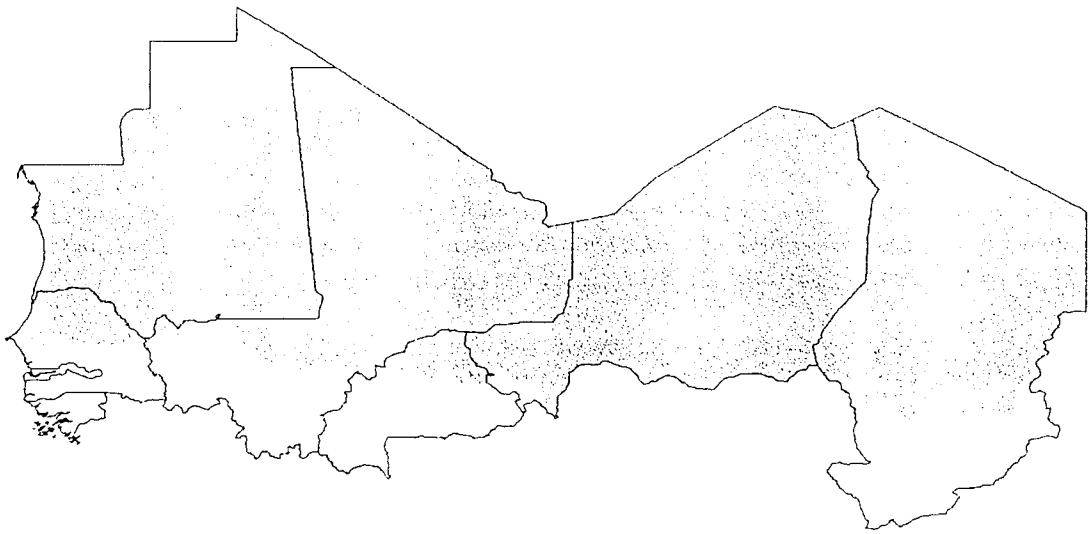
Taking 600 mm as the threshold of aridity:

- The area affected by aridity covers essentially the whole of the CILSS (84%) but concerns less than half the rural population (48%), and only a third of the value added of crops; while we were not able to calculate it, the proportion is undoubtedly higher for cattle production.
- The degree to which countries are affected varies considerably : it spans the whole of Mauritania and Cape Verde, almost all of Niger, but none of Gambia and Guinea Bissau.
- With the exception of Niger and Mauritania, the arid zones represent relatively specific areas.
- Cattle raising and irrigation play a significant part in these zones. Rainfed agriculture, being uncertain, is generally restricted to subsistence production.
- These areas have traditionally developed mechanisms to protect themselves as much as possible from risk: a long tradition of migration of populations in the dry season (the Soninké of the Senegal River, the Dogon of Mali, the Mossi of Burkina Faso, etc.); the mobility of herds, the importance of transhumance; and extensive and dispersed farming methods to reduce the economic and climactic risks.

The Broad Climactic Zones of the CILSS and their importance based on three criteria[7]

Climactic zone: rainfall	Percentage of CILSS area	Percentage of rural population	Percentage of crops value-added
Under 400 mm	73%	21%	13%
400-600 mm	11%	27%	22%
600-800 mm	6%	21%	23%
Over 800 mm	10%	31%	42%

Map of the area below 600 mm rainfall in 1950-1990 statistics



Percentage of of area under the 600 mm threshold of the CILSS countries

	MRT	CpV	NRE	TCH	MAL	SEN	BKF	GMB	GNB	CILSS
% of area	100	100	97	84	80	45	21	0	0	**84**
% of rural pop.	100	100	84	31	41	44	15	0	0	**48**

2. Elements of a solution

The response to the problems of the dry zones revolves around two complementary themes:

[7] *The countries of the CILSS except Cape Verde. The figures are calculated according to a climactic zoning of average precipitation over the period 1950-1990, by arrondissement (Mahe, 1996; Autissier, 1996). Other data come from Waltps and national statistics. Unfortunately, it was not possible to distribute spatially the wealth created by cattle production in all CILSS countries. The "analysis of agricultural change" team is currently collecting information to attempt this exercise, which is even more difficult than for agricultural products (where price systems and data are largely heterogeneous). Nevertheless, the case of Burkina Faso seems to show, as we expected, that raising cattle produces revenues far superior to the national average in arid zones.*

- Reduce the risks associated with drought: this can be achieved through better control of water resources (irrigation and other hydraulic works, managing the slopes to make better use of water run-off (half-pipes...) and improving the drought resistance of plants and animals (research on and diffusion of adapted varieties and techniques).

  Resistance to drought sometimes occurs through less direct means than one would think. Breman has shown that, in the Mopti region of Mali, the primary limiting factor to grazing activity is not water, but phosphorous, whose scarcity limits root growth and prevents full exploitation of limited rainfalls.

- Promote adaptation to the risks of drought: mobility (of livestock), economic diversification that is not closely linked with local agricultural raw materials (of which migration constitutes the largest part today); encourage flexibility in economic management and develop forms of insurance that are adapted to an increasingly monetized economy. This adaptation to risk is already well developed among the people, and it is important to be careful to avoid thwarting it by exogenous actions or to safeguard it when it is threatened (mobility of herds, for instance).

In all cases, we must take into consideration the fact that these zones often have limited economic potential and that they are natural emigration zones, temporary or permanent. Intervention in arid zones should not necessarily work to counteract this migration but rather seek to provide those who cannot[8] or do not want to[9] leave the region with the means to live there in dignity. Emigration of a part of the family has always been and probably still is a way adopted by the societies themselves to achieve this end.

B. The battle against extreme rural poverty

1. Nature and scope of the problem

In the technical literature there are two ways to define poverty: using an absolute definition (income below an defined threshold, a certain percentage of the local value of basic needs, thresholds of certain indicators of [mal]nutrition or health) or using a relative definition (the poorest fraction of the population in a given location: in general the first decile [the poorest 10%] or quintile [the poorest 20%].

In Burkina Faso the absolute[10] threshold is defined as 41.100 FCFA (including self-consumption, before devaluation). According to this definition, 46% of Burkinabé are poor, and this proportion varies from 40 to 60% among the country's 30 provinces.

If, on the other hand, we use a relative definition focusing, for example, on the poorest 20%, then we obtain a group whose average income is below 27.000 FCFA. According to this second definition, the percentage of poor varies from 15% in the richest region (the south east) to 30% in the poorest region (the North).

Based on our review of several surveys, the following conclusions can be drawn:[11]

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[8] *Women with young children, old people, people who are too disadvantaged and have difficulty integrating themselves into the employment market outside their family and local environment.*

[9] *Particularly due to the fact that the historic territories of some ethnic groups are entirely located in the dry zones (e.g., the Touareg, the Dogon, and the Soninké).*

[10] *Corresponding to around twice the value of the recommended caloric ration in the local cereal.*

- Poverty is influenced by the natural environment (drought) and the location in relation to the market (isolation), but it is also a product of social factors. In Burkina Faso, even in the rural areas considered "rich" (cotton growing areas), 15% of the population belongs to the group corresponding to the poorest 20% in the country. This proportion rises to 30% in the northern and south-western regions, the most disadvantaged. Extreme poverty appears therefore to be a phenomenon that is diffused spatially, and linked more to socio-economic factors within the groups than to factors primarily of a geographic nature.
- The income of the poorest is essentially devoted to food (63% of the income of the poorest quintile, compared with 46% of that of the richest quintile in Burkina Faso).
- Among the poorest groups, what appears to be income corresponds in large measure to self-consumption (around two thirds for food as well as non-food consumption in the case of Burkina Faso): their financial capacity is therefore even more limited than their apparent income would suggest.
- In these groups, expenditure on essential services like health or education is particularly low (1 to 3% of income in Mali, depending on the region, 5% in Niger).

In treating the problem of extreme poverty one therefore faces several problems: the diffused nature of the phenomenon, which affects all the regions to significant degrees, the largely endogenous nature of this poverty, which is as much a product of the evolution of these societies as a consequence of the economic and natural environments in which people live, and the low market participation of the groups studied, which makes them particularly difficult to reach through broad measures.

2. Elements of a solution

Actions whose aim are specifically to relieve extreme poverty (falling outside the realm of general economic growth, which hopefully will spill over on part of this group) are often "interventionist" measures in that they intend to counter the spontaneous evolution of these societies, which is extremely difficult.

> *The difficulty in reaching marginal populations without taking into account the forces that have induced their marginalization could lead to counterproductive measures, as shown by the extreme example of the subsidization of fertilizers in northern Nigeria. A diagnosis as showed that the poorest farmers in this area could not pay for mineral fertilizers because their price was too high. It was therefore decided to subsidize these fertilizers. While the subsidy was primarily aimed at small farmers who produced for their own consumption, it was even more beneficial to those who were already active in the seed market: large producers or retailers. Consequently, some of the subsidized fertilizers went on the market in Niger, enabling some retailers to profit substantially, while the rest was used by the most well-off producers. The subsidies only applied to a limited quantity of fertilizers, so these products became increasingly scarce on the "free" market, its supply more uncertain, and the prices higher. Overall, the precariousness of the poorest was exacerbated and social differentiation was probably accelerated by this measure.*

[11] *Profile of poverty in Burkina Faso, survey of economic and social circumstances in Mali, survey of rural households in Niger.*

In supporting the most vulnerable groups, we must attempt to improve the access of the poorest to sources of income and/or factors of production, while taking into account the forces that have contributed to the marginalization of these populations.

Thus, on the issue of credit, specialists have noticed that, in order to avoid that measures aimed at the poorest be captured by the more powerful, they must be made advantageous for the former but not the latter. Consequently, they recommend relatively low credit ceilings with high interest rates.

Equally, access to land is laid out in terms that are contradictory, depending if one wants to oppose to the natural evolutions or jest bend them.

- Some people think that it is necessary to oppose the process of land commodification, reinforce group rights to collective areas and reinforce land use rights on appropriated land, while preventing the sale of land. To the extent that the most modest groups derive a significant part of their food and non-agricultural resources from land and common areas, they insist that this is the only way to avoid the proletarization of the weakest members of society.
- Others claim that even if the process of land privatization could be slowed down, it probably cannot be reversed and it would be better to let the most dynamic groups retain control of resources, while trying to intelligently redistribute wealth that they earn (in the form of agricultural salaries, activities derived from agriculture or the circulation of job-creating wealth. From this perspective, it is necessary to support the concentration of land in the hands of the most technically performing producers (since intensification demands labor) and attempt rather to avoid speculative buying, which creates few jobs.

Also, we must look at all the solutions that allow the most vulnerable groups to develop their resources, and we must not think *a priori* that this has to happen directly through agricultural production. Comparisons with Asia[12] show that "poor" Africans depend much more on agriculture than their Asian counterparts, but this does not mean that it is their only prospect for development. All labor-intensive activities should be promoted, including non-agricultural ones.

From this point of view, access by the most disadvantaged groups to training is probably a priority. We must not, however, overlook the difficulty of this task: the poorest groups are also those who can least easily do without the value of their own labor or that of their children, even for an investment that would be profitable in the medium term.

In all cases, when it means acting at the margin of social relationships to reinforce the weakest groups, or dealing with cases of poverty, the main problem is not so much the cost of meeting the basic needs of the populations concerned as the costs of intermediation.

C. Stimulating the contribution of agriculture to the economy

1. Nature and scope of the problem

Agriculture is an essential economic sector in sub-Saharan Africa, where it generates a significant (and sometimes dominant) percentage of jobs, of value-added and of export revenues. In many

[12] *Reardon, in EPAT, 1991. Some conclude that African agriculture must be given greater priority, while others think that nothing is more urgent than economic diversification.*

economic projections, it is expected to be the engine of development in the region: to increase the per capita gross domestic product in the context of rapid demographic growth (between 2 and 3% in the Sahelian countries), experts recommend to seek a 4% growth in agricultural production in the medium term. Using this figure, we will examine what it could mean for the countries of the Sahel region.

Agricultural and economic indicators in the CILSS countries

Parameters / country	MR.	SEN	GMB	GNB	CPA	MLA	BKF	NIGH	TAD	CILSS
Total 1990 population (thousands) (a)	1,964	7,275	925	964	323	8,184	8,681	7,678	5,454	41,448
Per capita income (b)	460	650	270	170	570	180	250	290	180	315
Percentage of farmers in 1990 (a)	0.65	0.61	0.64	0.72	0.62	0.77	0.79	0.81	0.73	0.74
Agriculture as a proportion of GAP(c)	0.3	0.21	0.32	0.54	0.23	0.47	0.45	0.39	0.44	0.34
Agricultural GDP / farmer	212	224	135	128	211	110	142	140	108	145

a) Waltps, 1994; b) World Bank, 1994, 1993 income expressed in 1987 US$; c) 1991-93 average calculated using data from the World Bank, 1994. Note that the agricultural GDP includes fishing, which makes an important contribution in some countries (re. infra)

Structure of agricultural GDP

Data from the major international statistical yearbooks (the World Bank, in particular) do not give precise details on the structure of the agricultural GDP, which obviously raises a problem in discussing its growth prospects. We thus tried to reconstruct the structure of the agricultural GDP in the CILSS countries for 1990 with the national accounts data available for some countries and a price system derived from these data for the others (Ninnin, 1996[13]). The following numbers give an appreciation of the orders of magnitude:

Parameters / country	MRT	SEN	GMB	GNB	CPV	MAL	BKF	NIG	TCD	CILSS
Fishing as a percentage of agricultural GDP	60%	26%	21%	4%	61%	5%	1%	1%	1%	13%
Agricultural GDP except fishing / farmer	85	166	107	123	82	105	141	139	107	126

In what follows, agriculture designates only the value added of crops and cattle production, without taking into account fishing, whose status varies (village fishing, small to mediaum urban-based fishing, and the sell of industrial fishing rights are not differentiated in the sector accounts, make it difficult to interpret the data for our purposes). Let's not forget, however, that fishing is important in the statistics of the agricultural macroeconomy of the coastal countries of the Sahel.

Share of agricultural value-added (%)	MRT	SEN	GMB	GNB	CPV	MAL	BKF	NIG	TCD	CILSS
niébé grain	15%	27%	31%	34%	20%	42%	51%	60%	28%	41%
Peanuts, cotton	0%	29%	40%	5%	0%	12%	12%	2%	15%	13%
Other crops	3%	11%	6%	22%	36%	9%	9%	9%	24%	11%
Cattle	81%	33%	23%	39%	44%	37%	28%	29%	33%	35%

[13] *These are provisional, unpublished data. The comparison of national accounts data shows that the values attributed to different products vary considerably among countries, which obviously makes comparisons difficult. The solution adopted here -- applying a fixed price to the production of the Sahel countries -- also has its weakness (it tends to overestimate the agricultural product of large and/or less urbanized countries, and to overestimate that of small and/or more urbanized countries). However, it allows more accurate comparisons than national accounts data for these countries.*

2. Elements of a solution

Studies of agricultural production show that rapid production growth rates can be achieved if one offers rural people profitable work and dedicated capital (competitive with the alternatives), reasonable risk, and help to circumvent the technical obstacles raised by the associated demand (access to seeds, marketing help). The rapid increase of the land acreage planted with cotton in zones where these conditions came together provides the best example of this capacity.

Therefore, the problem is not to "bring" the rural areas to the market, but rather to propose steps that both satisfy the conditions mentioned above and are profitable for entrepreneurs.

Prospects for exporting to the world market

If we accepts that it is unlikely the Sahelian countries will export basic food products or animal products to the world markets in the next 10 years, we are struck by the small role played by these "exportable" products: 13% on average in the countries of the Sahel for cotton and peanuts (a significant portion of which is consumed locally), to which we can add a few other exports of higher value added, but in volumes that are marginal to the national economies: fruits, vegetables, cut flowers, shea (karité) ... In Senegal, for example, a rough estimate places exports of various agricultural products at 2% of the agricultural GDP. In total, probably no more than 15% of the total value of agricultural production in the Sahel countries is exported on world markets.

These products are characterized by an international demand that is often large from the standpoint of potential production in the Sahel (the markets do exist but are highly competitive: the Sahel countries have no control over the price fluctuations of these products. This is true for cotton, which today produces sizable profits but lost money in the late 80s. Its is even more true for fruits and vegetables, which need to be shipped to precise and often narrow market niches.

Unfortunately, local demand for these products is generally much too weak to cushion the fluctuations in world prices. The development of an internal market for these products would give traders a more stable environment.

> *Thus, the fruits and vegetables producers in the Banjul region first try to export their products, which is more profitable, but they have a second market in the local tourist establishments and, finally, they can sell their lower quality products on the local market.*

As a general rule, it seems that the penetration of new markets, for the most part highly competitive, is either the domain of relatively large firms, which have a salaried work force, or is accomplished through production contracts negotiated with small producers, which is often a less expensive solution but whose outcomes are also lees predictable.

Prospects in the domestic market

PARAMETERS	MRT	SEN	GMB	GNB	CPV	MAL	BKF	NIG	TCD	CILSS
Total 1990 population (millions) (a)	1.9	7.3	0.9	0.9	0.3	8.2	8.7	7.7	5.5	41.4
Percentage of farmers (a)	65%	61%	64%	72%	62%	77%	79%	81%	73%	74%
Maximum number of consumers per producer (b)	0.5	0.6	0.6	0.4	0.6	0.3	0.3	0.2	0.4	0.4
Share of food provided by the domestic market (c)	46%	51%	36%	76%	25%	90%	93%	90%	93%	80%
Actual number of consumers per producer (c)	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.2	0.3	0.3

*a) Data from Waltps; b) non-agricultural population/agricultural population; c) expressed as a percentage of total available calories; d) calculations by M-C. Lebret using FAO data; d) =c*d*

The domestic market of Sahel countries remains primarily characterized by very high rates of self-sufficiency, except for coastal countries, and by a high rate of households selfconsumption: the average market served is currently 0.3 consumer per producer. It must be noted that this high in-house consumption has major structural determinants: the ratio consumers / producer is 0.4 on average for the CILSS countries, with a high of 0.6 in the coastal countries. Even if the whole market in the Sahel region went to domestic production, this would still not be a very large market.

The growth of the food market to which Sahel farmers have access has several possible sources:

- **Demographic growth**: Increases the size of the food market at the rate of population growth, but does not increase, as such, the farmers per capita income because the number of producers increases at the same rate as the number of consumers.
- **Urbanization**: Increases the proportion of consumers in relation to producers, and must translate into an increase in rural incomes if consumers buy their products. It does not increase the agricultural GDP but changes its structure by decreasing the share of in-house consumption.
- **Improvement in diet**: By creating a demand for more varied products commanding a generally higher price, it increases the farmers' incomes and the agricultural GDP insofar as this diversification is met by the local market.
- **Recapturing the local and regional markets for food products:** Increases the average market that is accessible to each farmer.

The best prospects of growth for Sahel agriculture seem to lie in be the evolution of local food consumption habits (increase in quantity, better balance, greater variety) and the capture of a share of the regional markets, two factors that could go in tandem.

However, this growth is hampered by the low percentage of buyers and their limited buying power, which induces them to concentrate their spending on basic products: cereals and roots.

This leads to the following conclusions:

- There is great potential for progress in agricultural production if producers have access to regular, viable demand.
- However, local demand is very low when one considers the number of producers, which makes the markets uncertain both in terms of prices and of volume.
- Meeting the demand on world markets, which are often highly specialized, requires a lot of knowledge which is out of reach for the farmers of the Sahel: they depend therefore on channels set up by intermediaries, either public (cotton, peanuts) or private firms (which employ salaried workers directly or use production contracts).
- The regional market, notably that of the richer countries which are more urbanized than the Sahel countries offer important growth prospects, but this assumes that the Sahelian countries compensate the disadvantage created by their isolation.

Average transportation costs, in FCFA/ton/km, by distance and type of vehicle

	< 25 km	25-75 km	75-200 km	200-500 km	> 500 km
<10 tonnes	190	129	70	58	28
10-25 tonnes				41	25
>25 tonnes				30	21

Each type of production thus comes up against specific bottlenecks: investment made by suitable intermediaries for exports; irregular and narrow base for recapturing the food market; limited purchasing power for diversifying local food consumption patterns; isolation and competition with closer neighboring regions in trying to penetrate the markets of coastal countries. The potential for growth and the associated problems are more or less important from one country to the next. The synergy between food diversification, recapturing the domestic market, and exporting is more important in Senegal and Gambia, which have great tourism potential, relatively more expensive workforce, and are well integrated into international markets. Improving the domestic food diet and capturing a portion of the regional markets are clear determinants of growth for Niger and Chad, Nigeria's neighbors. No country has one major and obvious source of growth that would fulfill all the basic objectives: the more dynamic products are marginal in terms of production, and the major products are lethargic because they are still dominated by in-house consumption.

Barring a miraculous recipe, the best approach is to put a maximum number of farmers in the position of being able to profit from the rapidly changing opportunities of the market. Help them form agricultural capital (land, tools, knowledge), provide the tools – upstream and downstream – to improve their production (credit, savings, supplies and marketing), and finally, put them in regular contact with the market (road and markets). As shown in the table below, the type of transportation routes, but more importantly, their quality can make significant differences in transportation costs.

Cost of transportation according to the quality and state of the route used

	Cost: tax included. FCFA/T*km				
Quality: 1 - very good, 5 - very bad	1	2	3	4	5
Asphalted road	48	55	68	99	157
Compacted road	61	70	81	120	189
Reasonably well-kept dirt road	64	74	83	128	210
Poorly kept dirt road	73	84	93	146	248
Rudimentary dirt road	105	120	127	186	296

But if agriculture is an important factor in economic development, it would be an illusion to think that it can be developed without the simultaneous development of the non-agricultural sector.

There certainly are ways of improving the performance of subsistence production that require little capital and which have had spectacular success in some deprived regions (like the zay in Burkina Faso and stone benches in Niger). But, altogether, the most dynamic sectors of rural societies are those that are closely connected to the market, or where methods of production have developed that widely make use of modern inputs. The flip side is that to finance the increased use of inputs in the production process, it is necessary to rely on viable markets. As we have emphasized, export markets could provide some support, but the main part must come from local

markets. Agricultural supply cannot, therefore, grow sustainably in the Sahel countries without the parallel development of non-agricultural activity.

D. Synergies and conflicts among the three challenges of rural development in the Sahel

From the issue of arid zones, to the problems of production expansion and those of rural poverty, we come across increasingly acute problems that are inextricably linked to the general development process and for which the intervention coming from the international community is more and more diluted.

Faced with complex challenges and the clear limits to aid, we have to seek solutions that remain within the current evolutionary stream, and which respond at once to the diverse objectives of supporting rural development. This is not always easy: we give below some examples of possible contradictions within one area as a result of a multiplicity of objectives.

Land	
Arid zones	Support mobility and the spreading of risk. Maintain corridors to the south the ensure the survival of nomadism in the north. Maintain common lands.
Poor groups	Avoid taking land away from the most disadvantaged, which only exacerbates their precarious situation. Stabilize land rights.
Economic growth	Some form of property is essential as a guarantee for obtaining credit. There will be no investment in fertility or long term physical improvements without guaranteed profitability. Encourage market transparency that reflects the productive value of land. Avoid abusive land appropriation.

Credit	
Arid zones	Encourage credit and insurance to bridge bad years.
Poor groups	Encourage short-term, small loans to get out of the debt spiral and avoid credit facilities being captured by the more powerful.
Economic growth	Encourage credit for equipment to optimize the rainy season and adapt to the requirements of the market.

Food security	
Arid zones	Limit the risks (mixed varieties, control surface waters), diversify the economy towards activities not dependent on agricultural outcomes, maintain population mobility.
Poor groups	Develop systems of agricultural intensification that do not require a lot of capital, thus limiting the agronomic risks. Avoid forced sales of crops by fighting against indebtedness with credit or the creation or income (cf. supra). In crisis situations, ensure the distribution of funds when the markets are functioning, or of food when there is no alternative, taking care to limit the side effects (destruction of the market, resale of products to meet other needs).
Economic growth	Limit the negative consequences of food aid on markets. Use private intermediaries to distribute food products or funds. Link the distribution of food products or income to productive investment.

In all cases, we must constantly seek the synergies between groups, regions, long and short-term objectives, searching out "useful relationships" which address the short term problems while delivering structural responses in the medium term.

3. WHAT FORM OF MEDIATION BETWEEN THE RURAL WORLD AND THE INTERNATIONAL COMMUNITY?

If it is possible to find technical solutions to most of the problems outlined above, most require financial, technical, or knowledge-based transfers from the international community. In this light, rural development poses a difficult problem: that of finding intermediaries.

In the CILSS countries, most of the investments in the rural sector come, directly or indirectly, from the bilateral and multilateral cooperation agencies, that is between 10 and 20 important sources of funds[14]. On the other hand, the rural population affected by the activities of rural development was, in 1990, a little over 30 million. Today the figure is approximately 35 million, distributed among some 50,000 villages or encampments. Cooperation with the rural sector thus presents a daunting problem of intermediation. To link highly concentrated sources of financing with a rural world that is largely dispersed raises a political and economic challenge of the first order, and one which gives rise to intense competition among potential candidates.

Even though it is a perilous and unavoidably sketchy exercise, we can identify the main categories of intermediaries and the perspectives they adopt.

A. Governments, administrative bodies, and parapublic agencies

These are the repositories of formal legitimacy, which makes them privileged interlocutors of international sources of funds. The legitimacy enjoyed by governments and their administrative agencies since independence has gradually eroded with time. It has ended up with their interventions being questioned, first by the beneficiaries, then, in the early 1980s, by the international community, in light of the crises – financial (structural adjustments), political and social – experienced by these States.[15]

The democratic renewal that evolved in the region at the end of the 80s, while giving a little lustre back to governments, has not improved the image nor the functioning of their administrations. These are too large given available resources and, therefore, badly and often irregularly paid; they are often without operating budgets, and unable to accomplish the public service missions which they received.

An efficient administrative apparatus, one that is adapted to its operating budget and working together with local institutions capable of acting in tandem with rural populations, could be an efficient development tool. But even relatively positive developments (like the CMDT with cotton farmers in southern Mali) show that the notion of public service still has a long way to go.

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[14] *For all the economic sectors of the Sahel, the 10 largest sources of aid represented 80% of total contributions between 1990 and 1994.*

[15] *For example, the debate on the legitimacy of the state, on the "suspended" state cut off from its base, the predatory state, etc.*

B. Market mechanisms

Next to the State, they represent the other important solution. Building roads and markets that promote all kinds of exchanges and encourage the supply of several types of services is one way to work towards rural development. Helping entrepreneurs to open new markets is also a way of helping? Even more directly, Agétips call on private enterprises to undertake labor intensive public utility projects, contributing at the same time to provide jobs and distribute income to the less qualified segment of the labor force; these initiatives unquestionably have a social impact. The entrepreneur's remuneration thus includes the cost of mediating the distribution of income.

However, if market mechanisms play a powerful role in economic growth, the solutions they provide are not equally effective for all problems: the poorest people, who have a particularly weak connection with the market and have nothing – sometimes not even their labor – to sell, are marginally affected by market mechanisms. Often they are even their first victims.[16] The arid zones are penalized by the fact that the climactic risks can weigh, directly or indirectly, on all economic activity. Moreover, even if the viable demand of some rural people increases rapidly, this demand will still be modest and often diluted over vast areas. This makes it even less attractive to those supplying services, so some solvent demand remains unsatisfied by the market.

Despite its limitations, the market is still a decisive force in the development of the rural areas of the Sahel. Institutional economists have shown that the market is not a "neutral" force but an institution that is (for better or worse) managed by public authorities to modulate the power struggle among economic actors and to promote certain groups or developments over others. In this light, the approach of the market in Africa is still very innocently liberal, too mechanical and not political enough: we must think about the direction to give to institutions that control the markets to adapt them to changing opportunities and to evolving challenges, current and potential, of the Sahel economy, while continuously optimizing their contribution to development.

C. Scientists and other producers of knowledge

Scientists do not, per se, provide an interface between the macro and local players. However, it is clearly part of their mandate to give an outlook on the local situation to national decision-makers. On the whole, this mandate is not completely fulfilled: most published research is very focused (by area or subject of study) and there are few syntheses that can inform the debate on the directions to give policies by describing rural dynamics in a global context. BAME[17] played this role in Senegal, and its disappearance is lamented by many local participants.

D. NGOs

Born essentially after the great drought of 1973, the NGO movement was at its peak in the middle of the 80s, the period during which they fill the void left by States in crisis that had just embarked on structural adjustment programs. The NGOs offer direct mediation between an external source of financing (sometimes northern NGOs use their own funds but it is also often public funding) and the rural people of the Sahel. This mediation was at first exclusively carried out by

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[16] *For example, when farmers are caught in a price squeeze when there is a bad crop, when the relative price of livestock falls in relation to that of cereals. In this sense, Gilles Gauvreau goes as far as stating that "the appearance in the rural milieu of proletarian families is as much a sign of economic take-off as it can be sad to see."*

[17] *The Bureau d'analyse macro-économique, established at l'ISRA with the support of MSU, gave decision-makers a scientific view of the impact on the daily lives of rural people of macro-economic and agricultural policies.*

organizations from the North, then a northern and southern NGOs worked in tandem. The concept of the NGO is still extremely broad and, therefore, vague. It encompasses several functional sub-groups:

- Southern organizations that group rural populations together directly. These organizations, which are generally active at the village level or in groups of villages of limited size, seem to fill two very different functions:
  - ⇒ A social and public service function which is aimed at the community as a whole and is the precursor to the activities of nascent local collectives (see point E).
  - ⇒ An economic function which is aimed, in contrast, at specific interests, and does not necessarily (even rarely) address itself to the group as a whole. This function is the precursor to the activities of nascent professional organizations, which can themselves be subdivided into organizations with union or consular operations (see point F).
- NGOs, both northern and southern, which are themselves "private" intermediaries between international funds and rural people of Sahel. These organizations are constantly walking the tightrope between ideological motives, which were often at their inception, and practical motives -- finding projects (even if it requires bending some of the initial principles) to continue to exist, a tendency that is often perpetuated over time. If it is desirable that some NGOs, northern and southern, continue to stimulate the thinking on development issues, it is likely that most will progressively become providers of services (research, management or communications) in what will increasingly be a market for rural development services, where they will be judged on their performance in terms of cost and efficiency. Swiss co-operation in Mali is already subcontracting Malian firms in all the phases of a land management project. This takes us back to the business of intermediation and to point B.

E. Local collectives

Most Sahel countries are involved in a process of decentralization, subdividing territory into local collectives, endowed with a judicial personality and regulatory and financial tools for intervention, which vary from country to country. The creation of these collectives offers particularly interesting insights for resolving problems associated with rural development:

- By definition, they ensure total and relatively homogenous coverage of the territory, which is not the case of the NGOs.
- They are specifically adapted to managing basic public services, those that are the closest at hand.
- They allow interventions to be targeted spatially (specific services aimed at local collectives in the arid zones or those that are especially disadvantaged).
- They can ensure local jobs in public utility work projects (a kind of rural agétip).

Local collectives are thus clearly the preferred partners in rural development, especially public or social services or infrastructure. Although their role, by all account, is going to be very significant in the medium term, there are still unknown s regarding the part they may play in the short term:

- It is generally considered that they must in time seek to become self-financing through local taxation. However, many analysts think that such financial autonomy with take time to establish, and that the budgets of local collectives are going to be dominated by external contributions (from the State or the international community) for a long time. This underlines once more the risk that external financing will override internal priorities.

- The State and the administration, while recognizing the need for decentralization, obviously recognize also the risk for its own power, whether at the fiscal level, that of territory, or the control they have over the market for partnerships with the international community. The more rights and prerogatives given to the collectives, the more the power of central governments and their administrations will be limited, something that the latter will not necessarily see in a positive light. There is also a noticeable reluctance to implement the measures and a vague inclination to maintain forms of administrative control, a priori, while arguing that these organizations lack maturity.
- It is not always easy to find a compromise between the size required to ensure the local collectives have a minimal economic and human base (which militates in favor of the multi-village collectives) but limited enough to maintain a strong sense of belonging, which is one of the strengths of local collectives and favors those restricted to one village.
- In all cases, the economic and human potential of local collectives is very heterogeneous. The further decentralization is pushed, the more the inequalities between regions will appear. The capacity to manage locally is real asset, even if not very visible, but the initial endowment varies widely and its formation can be a long process. This only makes it more urgent to act rapidly. [18]

F. Professional agricultural organizations

In contrast to the collectives, professional agricultural organizations are more focused and more selective. They are just starting to get organized, and it is all the better if they focus on channels in which there is room for negotiation. The case of cotton in Mali, for example, is an extreme case where there was at once a strong increase in economic value, and one interlocutor – technical and commercial – facing the farmers: the CMDT. However, even in the southern cotton region of Mali, more than 20 years had to pass between the creation of the first effective village association to distribute inputs and collect cotton locally, and the creation in 1991 of the cotton and food products growers union, Sycov. We find, although on a smaller scale, this type of determination when it is necessary to deal with clearly constrained official channels and the products have high value-added (cotton, cattle) or are more capital intensive, requiring practical negotiations with public authorities (e.g., allocation of water and royalties in irrigated zones).

Progress is more difficult in areas dominated by food producers, where markets are diffused, the actors numerous and the practical challenges of the organization less tangible. In this case, the professional organization is often the focus for mediating outside support with official channels (support for supplies, new entrants, stockpiling, for processing and marketing, crop credit and equipment). The creation of the organization is thus more exogenous and its viability more precarious without external intervention. Moreover, in contrast with export products for which there is shared interest in the country, agricultural producers are in competition with each other for small food markets: the support of an official channel or a given region sometimes translates into recapturing the markets and increased consumption, but this applies equally to sharing parts of the markets of other regions.[19]

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[18] *As much as we strongly believe, to repeat René Lenoir's expression, that "local management is to democracy what primary school is to science": the base of the whole edifice.*

[19] *To go back to the case of Mali, public subsidy of the Office du Niger, whose producers are organized to defend their interests, certainly improves national self-sufficiency, but also constitutes "unfair" competition for rice producers in the lowest echelons, who represent a very significant part of the production but who are less organized because they are more dispersed and less linked to the market.*

G. An eminently political problem

There are numerous mediators of the transfer between the international community (or within the national communities) and the rural sector and they have different perspectives: some are just emerging while other are stagnating or in decline. The forms of mediation have objectives that are at once economic (they absorb a very significant part of financing in rural areas) and political (they open channels in these areas, which still host the majority of the population in all Sahelian countries). The presence of certain types of mediators clearly determines part of the supply of cooperation.

In this document, we are not trying to decide if some forms of mediation are better than others, a frequent temptation among analysts. Rather, we must strive to organize positive competition among the various service providers, based on a certain quality of the services provided, and encourage a certain restraint on the part of the demanders of services, who should adapt their financing to the real managerial abilities of the intermediaries chosen. Only the development of a supply of diversified and high quality mediation will respond to the diversity of situations, in the short and in the longer term. Monopolies and exclusions in mediation must at all costs be avoided: the State-only is as counterproductive as the market-only or the NGO-only approach.

> *In Mali, the PRMC has, for example, contributed to the development of the supply of commercial services by splitting up invitations to tender to restock the emergency cereal supplies. When only large suppliers were able to provide the volume in question (several dozen tons) the invitation to tender focused on limited volumes, accessible to a larger number of local suppliers or farmer organizations. This experiment had a cost: higher management costs, and some players did not respond to the proposals. But this cost is not a pure loss: it is that of an experiment or a lesson.*

For the moment, the supply of services is still highly variable, the structures abound and "everyone claims to be doing everything." The use of intermediation services must take care to ensure that this supply stabilizes, in order to develop the supply of professional services, adapted to the needs of the end users (which are often quite precise) rather than those of the donors (which are often very broad). To the extent that solvency (and thus payment of the intermediary) at present resides with the donors, this "sensitivity to the demand" presupposes that the donor encourages the intermediary to submit to this discipline.

4. THE IMPLICATIONS FOR INTERVENTIONS IN RURAL DEVELOPMENT

A. Help the various national interest groups negotiate among themselves rural development priorities

There is clearly a need for a strategic rethinking of the whole rural development process in the Sahel countries in the medium to long term, but the existing bodies (CCD meetings, NEAPs, ASAP) are both too narrow in sectoral terms (they do not simultaneously take into account territorial, demographic, environmental, economic, institutional, and social objectives) and above all too exogenous, having been created more to negotiate the forms of external support than to debate priorities among national interest groups.

The international community is pressured by the recognized urgency of problems to solve and by the public opinion, which is sensitive to the striking images of poverty and underdevelopment. It is also more and more conscious of the need to respond to the priorities expressed within the societies that can most effectively gage them. This being the case, the temptation is great to

organize in a voluntary way participatory forums to debate aspects of rural development and negotiate ways of supporting the process. This temptation, however, raises two major risks:

- The first is that obtaining external financing will take priority over negotiating internal compromises. With the exception of the cotton regions, the challenges around which the economic players are likely to mobilize themselves will have a limited financial magnitude. The largest part of external financing will go towards the costs of intermediation. There is thus a permanent risk of letting the debate slip into the issues surrounding the interventions (who? what? how? with what remuneration?) and not on the synergies and compromises that need to be found among national interest groups.
- On the one hand, we cannot promote the establishment of national democracies in the Sahel countries (and sanction those who intend to oppose it, e.g. Niger and Gambia), and on the other hand organize representative forums to decide rural development priorities in a totally exogenous way. In countries where the rural sector represent on average half the economy and three quarters of the population, and where aid is a significant percentage of GNP, there is a real risk of seeing this process substituted for national authorities. The latter, who are democratically elected for the most part, pride themselves on the fact that they represent the various national elements in all their diversity, comprising diverse regions and social groups in the rural areas. The rural areas are still too important in population and economic terms for their destiny to be decided by anything other than national representation.

In both cases, direct organization of the debate by external partners slows down the process of learning about democratic negotiation of shared interests within the national polity.[20] It also biases the results of these negotiations by the expected financial support. In this area, it is therefore urgent to proceed slowly, while establishing solid bases. External interventions could take several directions:

- Strengthening the form of and the information offered by various interest groups in order to understand their positions and perspectives and those of their partners; this information must be simple, accessible, and diversified.
- Encouraging the various interest groups to organize themselves to defend their interests, and training them in negotiating techniques.
- Encouraging the dominant powers and groups to negotiate and co-manage, and eventually making offers of aid conditional on an openness to these techniques.

B. Offer long term support to the most vulnerable regions and groups

There are, in the Sahel, regions or groups whose situation is especially precarious and who have very little hope of improving their situation by the sole mechanism of the market, even if they benefit temporarily. We underlined previously that these might be geographic regions (particularly the dryest and most isolated ones) or social groups. On of the major justifications for aid is to support these groups, but this support often meets with great practical difficulties.

In particular, the destiny of the most vulnerable social groups seems to be inextricably linked to the general development process in the Sahel. It seems particularly difficult to conceptualize programs that are adapted to the needs of these groups and the scale of their problems -- programs able to reach several million people at once. In this area, there is a higher risk of making do with

[20] *Because there are other bodies and modalities through which the people of the Sahel know very well how to get arbitration!*

producing "cosmetic" projects, which are satisfying in principal more than they respond effectively to the problems.

On the other hand, targeted interventions are easier to conceptualize for the arid zones because they are easier to focus geographically, their problems reach the whole population and they carry limited demographic and economic weight in most countries.

Action in the areas that suffer from drought has long been discussed under the auspices of the International Convention to Combat Desertification (CCD). In light of the preceding pages, it seems to us that those responsible for implementing the CCD in African countries, like their external partners, have to:

- Reflect seriously on the information and methods required to identify the countries, and within them, the target groups or areas, and the best ways to give them structural support. It appears today that some countries that have the largest percentage of dry zones are also those that, for various reasons, have fewer partners and have made less progress in implementing the Convention (Mauritania, Niger).
- Make a special effort to adapt the international instrument that the convention represents to extremely diverse national situations: clearly, the dry zones do not have the same importance in all countries as they do in the CILSS. In some cases, they cover the whole country, while in others they are marginal zones within a large geographic ensemble: the debate over the priorities for interventions, like the methods of intervention, cannot be achieved in the same way in these two figurative examples. When the groups in the dry areas constitute a minority that is clearly delineated from the majority groups (e.g., the Touareg), it is questionable whether the national dialogue will spontaneously take into account the specific problems of these areas.
- Limit the thematic and geographic range of programs, but commit first of all to a long term continuity of effort. The target groups are particularly vulnerable and they could find their situations even more precarious if there is a sudden interruption in the support they receive.

C. Promote the dynamic elements that create wealth and jobs

It seems that general economic growth is still the first and the best response to all the other problems in the long term. There is unfortunately no recipe to ensure such growth, even if the extreme deprivation of Sahel populations shows that there is a sizable level of growth to be achieved simply in satisfying their basic and relatively simple needs: food, lodging, clothing, transportation, health. If the export of agricultural products is an important engine of growth, it will come first of all from the mutual domestic exchanges within these societies, but also from their ability to withstand external shocks. When the whole world is engaged in the same activity, you can expect little from your neighbor in crisis situations and it becomes everyone for himself. If, by contrast, everyone exchanges, buys and sells products with the rest of society, the complementarities and interdependancies will come into play more easily in times of crises. Agricultural policies, but other economic development policies as well, must take care to promote this complementary exchange, and the increasing complexity of the economies of the Sahel region, which sometimes also require a rethinking of trade policies in the developed countries.

> *In this sense, if the numerous voices are making themselves heard in the developed countries to challenge the export of subsidized agricultural products (rice) or inferior ones (bad cuts of meat) which compete unfairly with African agriculture, if rationalization measures are undertaken to regulate food aid practices, they are much less numerous to underline that the*

charitable donations of used clothing and shoes are strangling just as surely agricultural producers by eliminating their main potential clients: the mass of craftmen who would otherwise provide these basic goods. One very concrete and not very expensive step to take toward the development of the Sahel would be to do away – under international wastes legislation – with the products that have no value in their country of origin but are substituted for local production in the Sahel, and ban them from international trade.

On this general theme, it seems desirable then to:

- Encourage the flexibility and adaptability of economic actors: aid can play a large role by developing infrastructure (roads, markets, telecommunications) and supporting research to enable them to offer a wide choice of products and techniques to entrepreneurs, and by encouraging the circulation of knowledge.

- The capacity to respond also depends on the development of professional intermediaries, private or cooperative, for the major services – upstream and downstream – of production (agricultural counseling, credit, supplies, marketing). Aid is clearly not neutral in the development of these structures, to which they often contribute funding, but donors must demonstrate patience and modesty, and realize that establishing capacities must take priority over responding to needs at an artificial pace. They must therefore support local dynamics without monopolizing them in the pursuit of their own objectives.

- Equally, lowering transaction costs and improving economic efficiency is not possible without a better functioning judiciary or economic regulation system on a national scale. There again, the virtue of policies cannot be imposed from the outside, but aid, through its strong presence among public and private actors, does have a role to play: it must endeavor to establish a dialogue and the co-management of policies in conjunction with the major interest groups.

- Finally, if it is true that the current transition phase presents an opportunity for a fundamental readjustment of social relations with the emergence of new, more commercial relations (a labor market, the rental of equipment among farmers, the sale of land) the aid donors, one of whose main justifications is still ethical, are badly placed to decide which direction these developments should take, even assuming that they can influence them. Without taking sides, what aid can do is to popularize widely the social innovations that can be seen throughout Africa in their diversity, in order to stimulate a domestic debate on favorable developments in each group or each society.

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