IN THE BASSE CASAMANCE(SENEGAL): FROM "SITUATION AGRICOLE" TO RECOMMANDATION DOMAIN (THE DJIBELOR EXPERIENCE)

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The goals and objectives of any Farming systems Research (FSR) program to be achieved, require the application of a certain type of methodology different from those usually applied in traditionnal and classical agricultural research. In order to meet farmers'needs and circumstances, we must understand how a production system is organized and how sub-systems interact among themselves to guide research priorities for better relevancy and efficiency.

One step of that methodology is to gather farmers with similar circumstances,constraints or cropping patterns under the same entity called either zone,recommandation domain or "situation agricole" as in the case of the Basse Casamance area.

The objective of this paper is to point out the steps used by the Djibelor FSR team to achieve the zoning of the Basse Casamance into five(5) "situations agricoles".

I-Definition of Concepts

-Zone : The dictionary gives the following definition :" An area,region or division distinguished from adjacent parts by some distinctive feature or character". The terms "adjacent parts" is meaningful in a sense that zone is more or less a physical division, with the idea of clear boundaries.

-"Situation agricole": It is cropping-pattern oriented .The equivalent of "situation agricole" may be a "cropping system" which has a broader sense than recommandation domain (KAMUANGA, 1986).In fact crops do not represent the unique criteria in the process of identifying a "situation agricole". Others, as important as type of crops, are used.There is not really an idea of physical boudaries .

-Recommandation domain : Byerlee et al.,cited by Shaner (1982), define this term as " a group of roughly homogeneous farmers with similar circumstances for whom we can make more or less the same recommandation.Recommandation domains may be defined in terms of both natural factors -e.g.,rainfail- and economic factors-e.g.,farm size". The idea behind recommandation domain is to identify large numbers of farmers homogeneous enough to respond to the proposed technology in a similar way.

The Djibelor FSR team proceded through the " situation agricole" concept to develop research activities from identified priorities by taking into account the hetercgeneity of the area(POSNER,1983). Each member of the multidisciplinary team could focus afterwards on area recognized as recommandation domain in order to improve the efficiency of the global approach by implementing localized and disciplinary research activities (the example of animal traction will be given). Three (3) main criteria

were used to achieve the zoning of the Basse Casamance into five (5) "situations agricoles".

II-Criteria Used to identify the "Situations Agricoles"

The following criteria were set up through a review of existing secondary informations(ressources and climate), informal and formal farm surveys and discussion with regional policy makers.

-Labor organization system: It allowed to divide the region into two (2) zones. Two (2) main ethnic groups with different ways of organizing labor were identified. The original Diola organization is oriented towards the type of field work: men do all land preparation anywhere a crop is going to be grown (rice fields ,peanut, cereals) and women perform all the planting, transplanting and weeding activities. The second zone, made of Diola under the influence of the Mandingue culture (Northeastern area) is characterized by a labor division based on the type of crops. The rice production is completely between women's hands while men are specialized in upland crops (cereals,peanut, sorghum,...etc).This type of labor organization is mainly found in the zone 4.

-Importance of animal traction: It also divides the area into two (2) zones: the northern and southern parts of the Basse Casamance(zones 4 and 5).Animal traction has a limited difusion in the north-south axis for different reasons (environmental, sociological and economic).

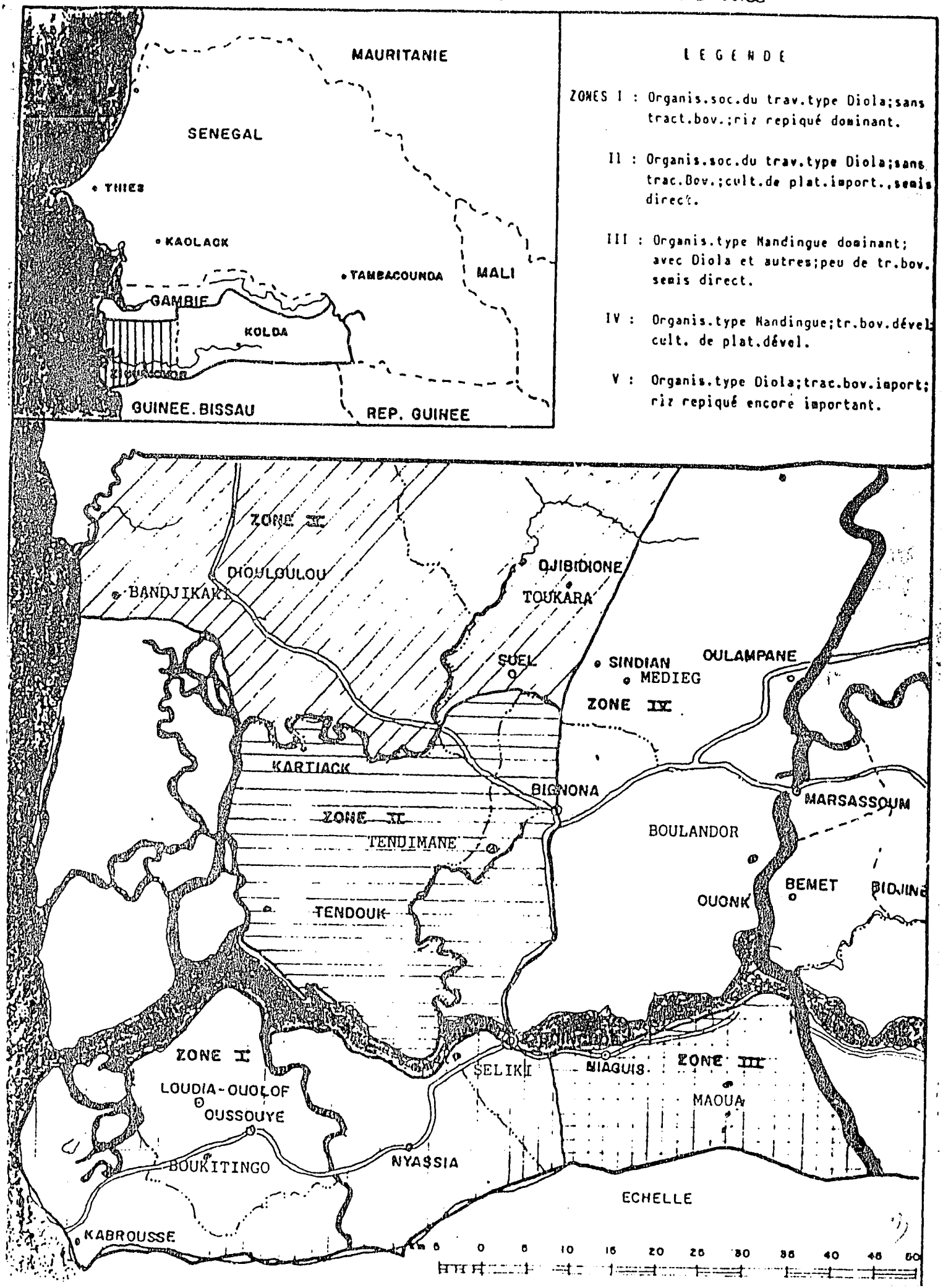
-The upland/lowland crops ratio:the geographic characteristics of the region, the rainfall pattern and the topography determine two (2) types of cropping patterns. The first one is based on rice production (zone 1) because of a lack of upland area .Rice is mainly transplanted in this zone.As one moves north, upland crops become more and more important,especially in those areas where animal traction is implemented (zones 4 and 5).

The combination of these criteria allowed the team to establish the zoning of the Basse Casamance into five (5) "situations agricoles"(see figure and table).

Table: Criteria used to classify the Basse Casamnce into zones

Zones Characteristics	I	II	III	IV	V
1-Importance of aquatic rice	Y	Y	N	N	Y
2-Importance of Plateau Cereal Crops	N	Y	Y	Y	Y
3-Importance of Animal Animal Traction	N	N	N	Y	Y
4-Existence of Labor Division by Crop	N	N	Y	Y	N
5-Existence of Labor Division by Field Work	Y	Y	N	N	N

Y= Oui ; N= Non .Source: Bernstein R., 1985.


MAURITANIE
SENEGAL
THIES
KAOLACK
TAMBACOUNDA
MALI
GAMBIE
KOLDA
ZIGUINCHOR
GUINEE. BISSAU
REP. GUINEE
LEGENDE
ZONES I : Organis.soc.du trav.type Diola;sans tract.bov.;riz repiqué dominant.
II : Organis.soc.du trav.type Diola;sans trac.Bov.;cult.de plat.import.,semis direct.
III : Organis.type Mandingue dominant; avec Diola et autres;peu de tr.bov. semis direct.
IV : Organis.type Mandingue;tr.bov.dével cult. de plat.dével.
V : Organis.type Diola;trac.bov.import; riz repiqué encore important.
ZONE II
DIOULOULOU
BANDJIKAKI
OJIBIDIONE
TOUKARA
SUEL
SINDIAN
MEDIEG
OULAMPANE
ZONE IV
KARTIACK
BIGNONA
ZONE II
TENDIMANE
TENDOUK
MARSASSOUM
BOULANDOR
BEMET
OUONK
ZONE I
LOUDIA-OUOLOF
OUSSOUYE
SELIKI
BIAGUIS
ZONE III
MAOUA
BOUKITINGO
NYASSIA
KABROUSSE
ECHELLE
0 5 0 5 10 15 20 25 30 35 40 45 50

III-Animal Traction in the region

Animal traction is important in the northern part of the region (zones 4 and 5). The existing technology has been assesed by the animal scientist and the agricultural mechanization specialist through two retrospective surveys on draft animals and animal drawn equipments (Sonko, 1985; Fall,1985). The results of both surveys revealed the existence of two areas using different types of land preparation equipments. Those two areas coincide with the two "situation agricoles" known as zones 4 and 5. The cropping system of the first area is characterized by the use of ridging implement originated either from the Gambia or from SISMAR'Senegal. The cropping techniques (ridges) is one major limiting factor to a further diffusion of the technology in the area. Thus, no seeders or weeding equipments are found in the area. However,no seeders or weeding equipment is available in the area. Yet, all recommandations to improve farmers cropping systems are based on ridging techniques of land preparation. The second area has more possibilities for the development of the technology as the basic land preparation equipment is the moldboard plow which can perform both flat and ridging techniques. Most of the recommandations for intensifying cropping systems focus on flat land preparation to allow the use of seeders and weeding equipments.

IV-Conclusions

The use of "situation agricole" or recommandation domain has to be considered as a tool to improve research activities and to increase efficiency by focusing on groups of farmers with similar circumstances. Two very important aspects to consider in conducting a Farming Systems Research program in this part of Africa are the socio-cultural heterogeneity and the physical environment. The socio-cultural heterogeneity brings about questions and issues relative to the adoption and diffusion of any new technology. Labor organisation can be different from one ethnic group to another, as in the case of the Basse Casamance. This implies different approaches in order to intensify cropping systems, by the use of animal traction for example. The type of labor organisation (Diola vs Mandingue) is usually a determinant factor in the process of technology transfer. The topography and the amount of rainfall determine the types of crops that can be grown (upland or lowland). In each system,research priorities and activities has to be determined and oriented to bring about improvements in the major production crops.

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