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Conomic Analysis of the Farms Activities in Semi-arid Areas of Algerian Est

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Abstract: The economic management of the farms in semi-arid area is made difficult by the great variability of the production inter-annual results. To leave the technical operation of the production systems makes it possible to better understand the economic performances starting from the only accounting incomes. In the present study we want to analyze the durability of the exploitations in the high plains of the Algerian East. A techno-economic monitoring was conducted on 16 selected agricultural units according to a regional typology of the exploitations over two contrasting climatic years. The recourse to association cereal-breeding and the mixed-farming-breeding can be a wise choice in difficult climatic year to partially make profitable the committed operational loads. In the exceptional situations, the investment in the auxiliary irrigation of part of surfaces cultivated out of cereals reveals the strategic importance of the retention of the grains for subsistence farming (human and animal) and the strategic stocks reconstitution.

Key words: Economic analysis, Farm, Typology, Diversity, Cereals, Semi-arid

INTRODUCTION

The agricultural company is an open system. Its good comprehension supposes knowledge: (i) of its function and its potentialities, the "internal" system, but (ii) also of its environment, the foreseeable evolutions and the actors with whom it is in relation, the system "company-environment" and (iii) of the relations with the family: the system "company-family". These three systems closely dependent should never be analyzed independently from/to each other [1].

In arid semi area, it is initially acts of ensuring the durability of the farms. This durability objective consists in the same time to aim sustainability of agricultural income but also of the ecological resources mobilized to ensure the income growth [2].

The study of husbandries [3] on the cereal exploitations, in the Setif high plains of the Algerian East, at the semi-arid climate, highlighted the various climatic, structural, socio-economic constraints of order [4]. These constraints condition the producer's interventions and they have a direct incidence on the level of cereal yield [5]. The logical response of the farmers to these constraints results in a series of the practices combined or not in the exploitation aiming at decreasing the risks. Among these practices there is (1) the adoption of an extensive system in particular in cereals cultivation, (2) the association of different productions sensitive to climatic variations (cereal-breeding). According to Millar and Photakoun [6], the breeding can play a paramount role to ensure the durability of these agricultural systems (3) the species diversification within the cereal system (4) the water mobilization for the irrigation are used to cultures diversify and/or to provide an auxiliary irrigation making safe the cereal production partly. The articulation between the mixed-farming-breeding takes part in the establishment of the agricultural income and the blow to the durability of the farms [7, 8]. This requires forms of organization and various production logics [9-11]. (5) the pieces hiring in fallow to those which need some for their herd and (6) the multiannual cereal reserves constitution for consumption and the seeds. These results can be checked by analyzing the economic profit of the farm [12, 13].

The research presented in this paper focuses on the economic activities characterization of the farms starting from the systematic production costs recordings and the sales on two campaigns: (i) for all exploitation products (ii) for the cereal cultures in a specific way. We based ourselves to understand the microeconomic aspect on the technical function follow-up of the production system in each exploitation type according to the concept of Mc Cown [14] and Cochet, Devienne [15]. This economic

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analysis was based on the elaboration former of a typology [16] to the regional scales which describe the forms of farms organizations and the systems production orientations according to the structural and environmental factors [17, 18].

MATERIAL AND METHODS

Study Area: The work was carried in the Setif high plains in north-eastern Algeria (36_11 N, 5_25 E), The area is flat and covers 6.550 Km². It is bordered to the east by Mila, to the west by Bordj-Bou Arreridj, to the north by Bejaia and Jijel Mountains and to the south by the Batna and M'sila. The Setif high plains were characterised bay three climatic stages: the superior semi-arid, SSA which on average receives 400 to 500 mm of rain per annum; the middle semi-arid, MSA (300 to 400 mm/an); and the inferior semi-arid, ISA (200 to 300 mm/an). In these areas, the climatic risk and the dryness are cardinal data of the production systems [19]. Recorded average pluviometry each year during the two crop years of follow-up shows remarkable differences one year with other. The precipitations average during the first year (2001/2002: C1) is of 180 mm/an, what represents a variation of-266 mm/an, compared to the Seltzer average. On the other hand, the second year (2002/2003: C2) is regarded as rainy with an office plurality of 462 mm/an and a variation of +16 mm/an compared to the Seltzer average. In north, we find profound soils with strong water retention capacity; they are black or gray ground. On the plate, in MSA and ISA according to the gradient of aridity, the soils are more or less surface, of clear colour or reddish and charged of limestone, of light texture, sometimes encrusted [20].

Study Approach: A regional typology, being used as a basis for the choice of the sixteen followed exploitations, was primary realised. One in a first phase chose among 12000 exploitations covering 21 cereal communes, 120 agricultural units: 48 units in SSA, 25 units in MSA and 49 units in ISA. The sampling of the exploitations results on the one hand from a choice of the zones according to the factors regarded as important of the variability of the area (relief, water availability irrigation, region enclavement). The objective of this survey is not to make a sweep of the diversity in the statistical sense, but rather to retain representative cases of diversity regional [21-23] of the units agricultural in the track of Mitchell [24]. We then carried out on each exploitation a function enquiry according to the suggested methodology by Capillon [25]. The criteria proposed to work out the functions types depend on the agro-ecological, structural factors (Useful Agricultural Surface, farm equipment, buildings, hand work, use irrigation water) and of the productions implemented. The extraction of the principal components shows that two groups of factors which cumulate 71% of the total variance [10]. The first component, of a structural and environmental order, known as "explanatory" expresses the durable agricultural activities [26] through the economic guidelines (cereals-ovine breeding) and represents a share of 51%. The second component, with 20% as variance, expresses more unusual situations underlining the economic dynamism through irrigation and the bovine breeding. The analysis of the graphic layouts of the Principal Components Analyses (PCA) lets appear five types of exploitations per economic guideline (Figure 1): (*i*) small-scale farms "diversified bovine-breeding" called T1, (*ii*) small-scale farms "diversified

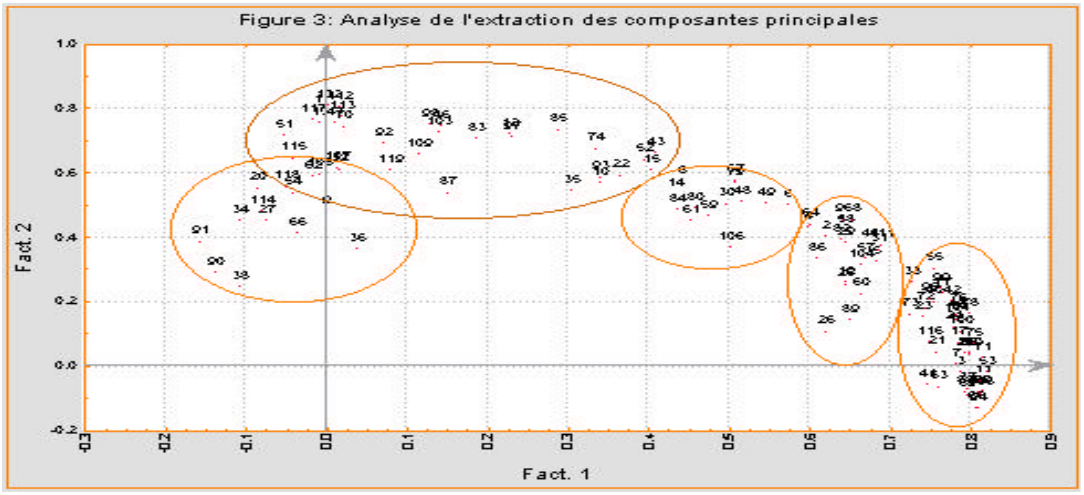


Fig. 1: Extraction of the principal components analyzes

having a mixed breeding" called T2, (*iii*) average unities "cereal-breeding" called T3, (*vi*) large farms "cereal-breeding/ cereal-breeding-potatoes" called T4 and (*v*) large farms "mixed-farming-breeding" called T5 [10].

According to several authors [15, 25, 27-32], the comprehension of the function and the organization of the production system can be apprehended through the breeding and farming systems concepts and to understand well the function of each one of these constitutive subsystems, then the relations which they maintain like the fodder role certain cultures, contribution of the breeding to the fertilization of the cultures and the use of the fallow. The economic analysis of the exploitations types aims at comparing the exploitations between them after having classified them according to a single comparison criterion: company profit [33]. This profit is studied through the production costs and the gross margins observed. According to the economic profit, one will proceed to the economic evaluation of the vegetable and animal production of the exploitations types by the calculation of the gross margin and the operational loads. It aims to determine in one hand, the factors which explain that such group has a higher income than other group and in other hand, to determine what is the share of income of each speculation is in the overall income. The cereal production loads and incomes are calculated (according to formula 1) according to the production types [34]. The Xj production value of a produce J is defined by the gross product, algebraic sum of the sales, stocks and subsistence farming (taking away for seeds and animals). The various products (premium of selection, State aid) are not taken into account in our case. The production value resulting from the activity "dairy-cow" is calculated by making the sum of the various products resulting from the dairy's-cows, which they are sold or self-consume: one counts also the purchases of animals (except for the workshop fattening) which are sold (animal stock remaining in the exploitation is not taken into account).

The Y_k loads relate to production factors k and gather the intermediate consumptions. The depreciation, the labour and operating costs are not taken into account, we thus calculate here only operational loads (seeds, fertilizers, treatment, irrigation, cattle food, expenses veterinary, animals purchase of fattening,..). The gross margin of the farm i is defined by the sum for the whole of the speculations (cultures and breeding) of the differential between the Pj unit price of a produce and its j and its Cj unit costs multiplied by Qj volume of its production.

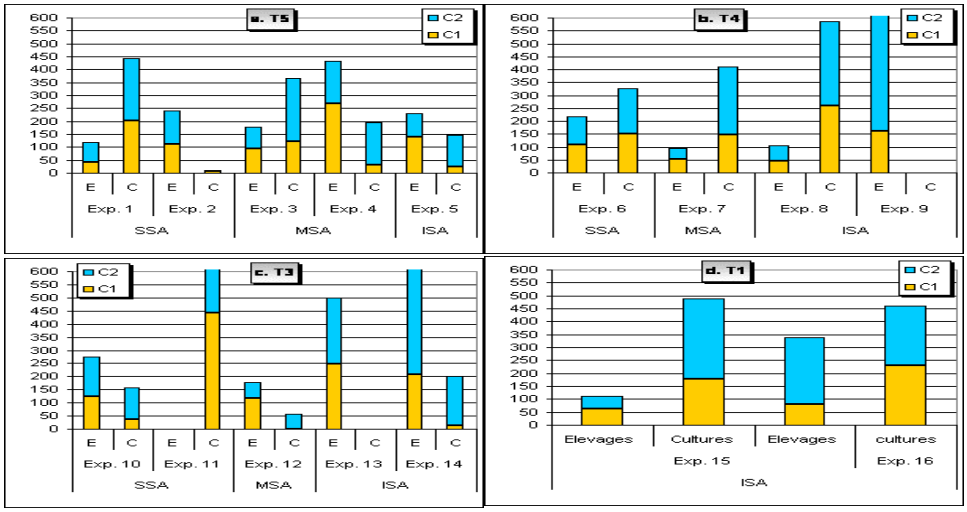
Formulate (1):
$$M = \sum_{j=1}^{p} (P_j - C_j)\chi Q_j$$

The rapport between the gross margin and the Xj production value enabled us to evaluate the economic importance of each speculation in the farms.

We make the choice not consider the fixed charges which depend on the production structures (financial expenses, maintenance of the material, depreciation and buildings). Indeed, our objective is not to realize an exhaustive economic analysis of the exploitation. In addition, these factors vary little in the short term (during the campaign). In the same way, exploitation subsidies (case of the national plan of the agricultural development), comparable with a payment of certain farming operations and production factors, is not taken into account by our evaluation. The products and loads are evaluated except intra-consumption like the barley and the oats, in particular of seeds and cattle food: this internal consumption is thus valorised at their cost according to the parallel market price and not according to their real cost price in the exploitation.

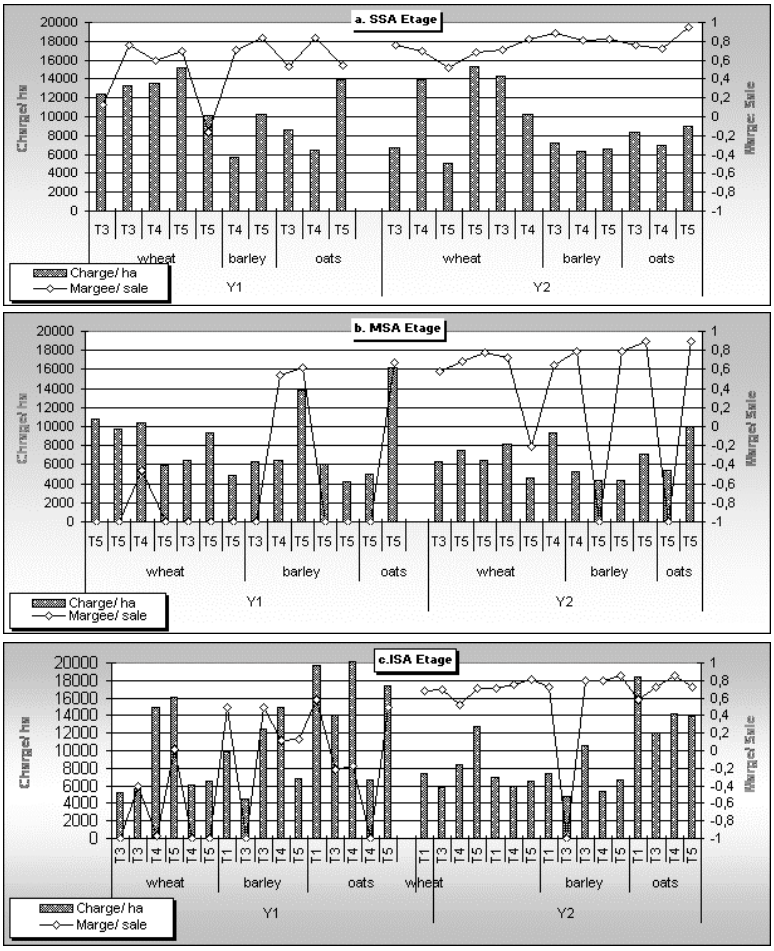
RESULTS

Exploitations Productive Potential by Production Type: Overall, the income of mixed farms (having an association between the vegetable production and the breeding) income was maintained each year with an elevated level with respect to the climatic constraints (Figure 2). The breeding plays a part of shock absorber in unfavourable dry years to the production of the not irrigated cultures [35], while allowing the perenniality of the exploitation in conditions of more abundant rainfall. The mixed-farming, it, contributes more to the economic profit of the region exploitations and mainly the irrigable speculations such as the culture-market-gardening, potato and even cereals when they receive an auxiliary irrigation (durum wheat, fodder). The mixed-farming at the T5 type in the three stages maintained overall good results while supporting the livestock production by (1) the use of the products and under products of the farm, (2) the purchase of food starting from the sales of the products and (3) the cereal surfaces by places were used to support, by the pasture in the course of culture, fodder stocks in C1 with an almost null harvest in grain. The cereal cultures release as one expected it profits appreciably higher in normal conditions rain (C2), which is not the case for the breeding, where income appears stable between the climatic years. We note that in case of bad cereal harvest



Legend: E: breeding, C: cereals, C1: 2001/2002, C2: 2002/2003, Exp.: exploitation

Fig. 2: Share of the cultures and breeding incomes by exploitation



Legend: *Y1*: 2001/2002, *Y2*: 2002/2003, *T*: exploitation type, SSA: Superior semi-arid, MSA: Middle semi-arid, ISA: inferior semi-arid.

Fig. 3: cereal species margins and operational loads

(C1), the contribution to the trading income is guaranteed by the workshop fattening (case of the units E2, E9, E12 and E13 as shown in the figure 2). These units belonging on various types and stages (T5 in SSA, T4 in ISA, T3 in MSA and ISA) recorded weak economic profits in cultures (exclusively cereal) in C1 (dryness) and partly in C2 (hail) compared to those achieved on sales of feedlots livestock.

It is also noted that in stages MSA and ISA and in spite of the dryness extent in C1, at certain exploitations especially of small size (exploitations E5, E6, E7, E8, E15 and E16), the share of the cultures incomes is high compared to the breeding. This "favourable" context is due to the irrigation practice on part of cereals, fodder and mainly on potato and the cultures market gardening's (known as speculative cultures).

The types T5 exploitations and T4 especially record a higher income in cultures compared to the breeding in the three stages in rainy climatic conditions. For type T3, in the region context, the breeding contributes positively to the trading income, it is higher in the event of dryness (C1), case where the cereals cultures contribute negatively to the exploitation global income in particular in stage MSA and ISA. For the small-scale farming (of type T1) oriented to the irrigated cultures: fodder and truck farming, the contributions of the incomes of these cultures were higher compared to those of the breeding.

Analyzes Economic Profits of the Exploitations in Cereals Cultures: We are interested in calculation of the report (margin on variable cost observed/ sale) for the cereal species: one puts it in relation to the operational loads per hectare and that in order to better understand adopted production logics. The analysis of the product margin of a culture enables given us to connect its variations to certain factors of order natural, structural or organisational [34]. In rain-fed conditions during the climatic year with reduced rainfall (C1), the stage SSA exploitations obtained loads and economic profits higher than those of the stages MSA and ISA units (figure 3). In irrigation conditions, the farms part in MSA and ISA could obtain narrow margins (-0,3) with averages (0,58) by the fact of an additional expenditure by irrigating cereals part. These margins can deaden at least part of the operational loads of the crop year and blow, one reconstitutes stocks of provisioning. For the climatic C2 year, considered as favourable, the exploitations majority of the region record a relationship (margin/ sale) between 0,6 and 0,8 without much difference between the modes of cultures control. These different logics of production having led to similar economic results (at least in the short term) can be explained by levels of very close inputs to efficiency [36].

Retention and the Subsistence Farming of the Cereal Products: Through the relations between the exploitation various workshops, the retention and subsistence farming play an immense role (Tables 1, 2). Here, we calls retention three phenomena that make the production beyond the sale on the official market (i) The reconstitution from the strategic stocks to ensure family and animal consumption several years. (ii) The realization of seeds stocks for a

Table 1: Retention of the cereal species during the years C1 and C2 (U: %)

Types		Drum wheat		Barley		Oats		Average	
Stages		C1	C2	C1	C2	C1	C2	C1	C2
SSA	E1-T3	02	-	-	-	-	-	02	00
	E2-T3	100	50	-	100	100	40	100	60
	E3-T4	14	15	100	100	100	100	20	17
	E4-T5	10	10	100	100	100	-	15	15
Average SSA		11	12	100	100	100	60	16	16
MSA	E6-T3	-	50	-	-	-	-	-	50
	E7-T4	-	-	100	100	-	-	14	14
	E8-T5	100	07	100	100	100	100	100	25
Average MSA		100	10	100	100	100	100	57	23
ISA	E10-T1	-	100	-	100	-	-	-	43
	E13-T3	-	38	-	100	-	-	-	56
	E15-T4	-	-	-	-	-	-	-	-
	E16-T5	47	42	100	60	100	100	67	30
Average ISA		47	44	100	67	100	100	67	35
Regional Average		13	14	100	85	100	86	22	20

Legend: SSA: superior semi-arid, MSA: middle semi-arid, ISA: Inferior semi-arid, E*i*: exploitation number, T*i*: exploitation type

Table 2: importance of cereal subsistence farming compared to the purchases and sales in the animal feeds by farm

		Purchases					*Subsistance-farming*			*Sales*		
Stages	*Expl.*	Year	Sun	Concentrate	Hay	Straw	barley	Straw	Hay	barley	Straw	Hay
SSA	E1T3	C1	290	90	1000	700	0	260	0	0	0	0
		C2	270	30	850	550	0	1290	450	0	0	0
	E2T3	C1	0	0	0	0	0	0	0	0	3070	210
		C2	0	0	0	0	0	0	0	0	1700	400
	E3T4	C1	80	80	0	0	140	500	600	0	4000	0
		C2	70	0	0	0	100	1200	600	0	9080	600
	E4T5	C1	1200	700	1400	810	0	0	0	0	0	0
		C2	1000	720	0	1913	0	287	50	50	0	0
	E5T5	C1	520	100	0	0	0	900	5920	325	22619	0
		C2	290	0	0	0	0	600	3900	300	16508	0
MSA	E6T3	C1	54	40	140	650	0	0	0	0	0	0
		C2	55	0	0	650	0	0	0	5	0	0
	E7T4	C1	173	0	0	0	0	820	370	52	0	0
		C2	150	10	260	790	0	410	0	40	0	350
	E8T5	C1	404	227	300	1200	0	3680	420	40	0	0
		C2	475	170	0	0	0	1080	240	0	320	815
	E9T5	C1	60	90	0	1760	60	360	0	0	0	0
		C2	90	0	0	2300	0	350	0	0	700	1500
ISA	E10T4	C1	20	26	0	200	0	0	0	0	0	0
		C2	17	0	0	350	0	0	0	0	0	0
	E11T1	C1	2	0	20	100	8	0	0	0	0	0
		C2	4	0	0	100	4	0	0	0	0	0
	E12T1	C1	0	0	0	80	0	0	0	0	0	0
		C2	0	0	0	0	0	0	80	0	0	228
	E13T3	C1	90	6	0	1300	0	0	0	7	0	0
		C2	100	0	0	700	0	0	0	0	0	0
	E14T3	C1	320	50	0	0	0	1340	320	2	0	0
		C2	240	0	300	750	0	0	0	0	0	0
	E15T4	C1	87,5	15	0	0	0	200	960	0	0	0
		C2	250	0	0	400	0	720	400	50	0	955
	E16T5	C1	500	48	540	2310	0	1400	1000	0	0	0
		C2	0	970	1180	1550	0	1700	1200	0	0	0

Legend: SSA: superior semi-arid, MSA: middle semi-arid, ISA: Inferior semi-arid, E*i*: exploitation number, T*i*: exploitation type.

possible wheat acreage of next partners (seeds farm) (iii) The sale the production part on the libber market, considering the price recorded in term of transfer.

The results of table 1 show average rates very close to the production thus retained at the references exploitations: 22% and 20% between dry year (C1) and rainy year (C2). However in C2, the quantities retained are definitely higher than the produced quantities; almost double compared to year dries (1488 Q in C1 and 2612 Q in C2) that is to say on average 98 Q in C1 and 189 Q in C2 and of the standard deviations of 145 Q in C1 and C2. The coarse grains (barleys, oats) are completely retained some are the production, without difference between the exploitations types and stages climatic: 540 Q in C1 and 1175 Q in C2. In the same way for primary cereals (durum wheat and common wheat), the retention is function of collect is 830 Q (13%) in C1 and 1325 Q (12%) in C2 for the same exploitations. So the retention is relatively important in good year and relates to primarily coarse grains at all the exploitations types. This is related to the strong function to subsistence farming of the farmers. The farmer's old strategy appears clear and evident: they preserve in exploitation the quantities necessary to human, animal consumption and with the production of seeds for the following countryside and market only the surpluses [37]. The logic of the small farmers is based on the constant search for a balance between the food safety requirement and the objective of increase in resources monetary necessary to family obligations and social, which gives a strict distribution of the productive activities. The culture of cereals (if not exclusively) is primarily intended for family consumption and the requirements in cash must be covered by other activities [38]. We note that due to very low and irregular

precipitation according to the gradient of north-south aridity, the retention of the cereal production is more important in ISA than in MSA and SSA according to the exploitation type.

Also, the cereal market is a major element in the region; that is related to the exploitations types according to their establishments and the type of cereals which they cultivate. On average, the surplus of the agricultural production intended for the collect by the Cereals Co-operative during the C1 year and C2 account for primary cereal 78% and coarse grain 08% (barley and oats). According to the assessments of Algerian Office Inter-professional of Cereals (A.O.I.C.), the collect realised by the Cereals Co-operative remain thus relatively modest compared to the total production: it constitutes, on average, 44% in a relatively stable way since independence [37].

DISCUSSION

In the context of the Algerian semi-arid area, the farmers adopt a production system, according to the climatic conditions and of the exploitation structure, investigating the minimization of the climatic risk and the valorisation of the natural resources [4, 39]. These production systems result in a series of logics and comportments which lie generally within a scope dominated by extensive cereals cultivation integrated into the ovine breeding [40]. These logics and comportments can be summarized as follows: (1) investments in the cereals cultivation are rather limited, (2) the cereal yield is strongly based on agricultural practices and climate: it is thus very variable in its performances for the same climatic scenario according to the exploitations and the area and between years including in the same exploitation, (3) an association attends cereals with a herd, (4) consequently, there exists a search for fodder in the production system which passes by the maintenance of the grazed fallow, the choice of cereals with high straws consumed by the herd and the strong fodder thatches exploitation in particular, (5) the dependence of the small-scale farming outside for the material culture delays generally the work.

We can estimate that the first results of the economic analysis based on calculus of the cost converge overall with the results resulting from the analysis of husbandries in area semi-arid [10, 36]. The cultures allow an economic profit high only when the climatic conditions are favourable, except the irrigated speculations which remain profitable each year. The breeding profits are minus. But more stable between years and the breeding thus play an economic part of shock absorber in unfavourable dry year with the cultures production dryness conduit. We could record that the strategies developed by the farmers in these areas are extremely differentiated and in relation to the climatic stage and the degree of exploitations structuring: diversification, association, extensification, irrigation, fattening. Similarly, we observe that the climatic constraint is a crucial factor which influences the production strategies (mode of cereals conduit). Whatever the difference in these strategies, in rainy year, they can lead to similar economic results which can be explained by levels of very close inputs. From where our conclusions on the inefficiency of the fertilization nitrogenised in absence of the improvement of the other intensification factors (in particular the varietals' choice).

As to the individual conduit by cereal species, it is extremely interesting to raise that for cereals led in irrigated, one has a light increase in loads due to the irrigation, without notable increase of the other loads because the technical itinerary remains simplified in addition (low dose of nitrogenised fertilization for example). On the other hand, the irrigation ensures a level of output which allows the accumulation of grains stocks and straw for the following countryside seeds, the animal feed and family subsistence farming. They thus make it possible to compensate for the weak performances of cereals in dryness. Even if it is noted that the irrigation presents with a great diversity of association with the other techniques: thus it is not automatically associated with a strong fertilization, or a systematic weeding or a work of early ground etc. On the contrary, it is found mainly associated with late dates with sowing, sowing with the flight and low dose of sowing. For the farmers, it generally corresponds to an auxiliary irrigation just after the lifting, therefore a kind of minimum insurance [41] and not inevitably a factor of intensification in an intensive technical itinerary [42]. Logics of production are articulated with combinations between the various workshops of which the exploitation is made up according to the objectives required [35, 43, 44]. This combination is strong on the technical plan and economic and takes varied forms: we see for example differentiated itinerary, in particular in SSA which will be led in intensives [45] and from the barleys into extensive which contribute to the need for herd through their farming precedent (grazed fallow more possible for a long time) and their products (grains entirely or partially intended for the herd, straw). Under the same conditions, climatic and soil and for Middle East and in North Africa (MENA) region, the

pastures support a growing in the majority of ruminant cattle. According to Hazell and al. [46], there is competition between the mechanized cereal production and the pasture in the zones with feeble precipitations (> 200 mm). However, no range exists for the advantage development of rain agriculture and very little for irrigation [46]. In certain regions in Morocco, characterized by very arbitrary climatic conditions [47] and in Tunisia [48], the inter-annual cereals storage (durum wheat, barley) is a capital characteristic of the farmers comportment. In Morocco as in Algeria, the share of the cereal production which is deferred of one year to the other is at the same time stable and important (approximately 20%) [47]. The choice of a weaker objective yield cereal by the farmers especially as a semi-arid inferior show than the yield fall is compensated by a loads fall. The observed delay in the farmers in stage MSA and ISA plays a part on the treasury. It allows avoiding loan since previous harvest is sold before beginning the work for the following countryside. Its major objective is to authorize the livestock to be grazed longer on the fallow [49] what mitigates exhaustion of stock to forage in particular after a bad year and defers food consumption bought for the winter. The serious nutritive lack leaves that the animals often depend on the crop waste quality products (for example straws, thatches) and on the expensive supplements food [49].

In records that more the semi-arid share of the strategies met in region in the Mediterranean region, the Maghreb and the Middle East are access on association cereals with the breeding and is not only specific to Algeria [6, 49, 50]. On the other hand, the use or not of the irrigation with cereals or the cereal-breeding shows the diversification of the production systems and of the extensification cereals along a gradient of higher aridity [49].

Beyond the individual analysis of the exploitations, we are interested in the units of exploitations being able to be represented by the same model (the “type”), that it is in their structures (function typology) or in their practices (itinerary technical typology). Resorted to the combination of these two typologies, through a systemic approach [17], it seems an original and powerful to understand the logic of farmers resulted in practices [15]. However, the heaviness investigations, as well for the elaboration of global typology as for the technical-economic follow-up of some of them strongly limits the exploitations number concerned with the study (respectively 120 exploitations then 16 exploitations out of 12000 with the regional scales). The logic of sampling, where we have chosen the areas under investigation agro-ecological (climatic stages) and the mobilized productive resources (water presence in SAI), however makes it possible to achieve our goal which is to release of the exploitations diversity and not to make a proportionally representative investigation. We proposed here methods of investigations (exploitation, parcel) and of data treatment which should be able to help with the knowledge of the production systems in other zones [51]. For example, it is this knowledge that allows us to understand that there is a logic of the production systems adapted to the climate and the climatic risks: (I) less there is of risk (SAS) more the exploitations are specialized out of cereals [52], (II) more there are risks, plus the strategies of the farmers pass by diversification forms. This logic of diversification appears as the most relevant way under constraining conditions as in SAI: the irrigation which is at the same time used to diversify the cultures and to ensure a minimum of cereal production.

On the economic level, beyond the collected data, it is more likely to follow for economic criteria that may better understand the economic function of these exploitations. In particular, the way of entering the subsistence farming, which one knows by the function studies how much it is frequent [49, 53] and important of exploitations [4, 48]. Also, it would be necessary to systematize and carry out on other climatic scenarios the statement of relevant economic criteria in the exploitations.

CONCLUSION

In conclusion, we can note well that the technical-economic context of the farm in semi-arid environment is constantly changing in random situations. While the retention aspect of the products and under agricultural produce for subsistence farming presents the common denominator and which does not change much. The increased vigilance of the farmers must make it possible to perceive the threats and to control their consequences while being based on strategic management to anticipate these events and to make decisions consequence. These decisions are translated by technical and economic acts. The extreme diversity of the cereal production costs according to the exploitations structure and the production systems, vary between exploitations and at the same exploitation. If one is turned over towards the agricultural production, one underlines to it not increase in the agricultural production. The quantities of sold cereal increase rather quickly since independence with an increasingly keen demand.

Method's aiming at the cereal rise of outputs in Algeria was the most important factor by far by these various policies: inputs increase, surfaces, transfer price adjustment, pre-financings and supports on the production, aid State. But without, the production remains below the expectations of farmers, despite the mobilization of technology packages. But in our opinion ignorance of reality regional, local, structural and especially functional calculus of the farms, as well as the socio-economic reality of the farmers with respect to the constraints outsides with the exploitation is the main cause. The relation study between the technical itinerary of the cereal system and the exploitation operation such we treated through some major determinants: the farm equipment weight, the breeding and the diversification weight in the production system could allow a real knowledge of the agricultural situation. In this perspective, we finds that the work on the cultivation methods and of the finer economic criteria follow-ups by taking of account the objectives and the constraints of the exploitations could make it possible to better understand the farms function. This objective must necessarily bring together all the profession agricultural actors: farmers, vulgarizations popularizes, public authorities, research institutes and techniques,… Finally, what would be good to put in place for more data? The establishment of an economic and technical observatory to national scales helped to clarify the issue of sustainability of agriculture in difficult environments.

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