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Ministry of Agriculture
and Agrarian Reform

Agriculture and Natural
Resources Office

**CEREALS MARKETING REFORM PROJECT
(CMRP--PHASE II)**

**BREAD WHEAT MARKETING MARGINS UNDER LIBERALIZATION:
A COST-BENEFIT ANALYSIS**

by:

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WORKING PAPER--10

BREAD WHEAT MARKETING MARGINS UNDER LIBERALIZATION:

A cost-benefit analysis

Objective of the model

A subsector which is administratively directed may contain pricing distortions at various stages of the subsector. Many of the real costs of production may be hidden from the consumer, either because of a subsidy paid to the consumer, or due to other charges in the system being borne directly by the government budget.

The Moroccan bread wheat subsector is a classic example of such a subsector. All along the filière, from producer and importer to collection agent to storage agent to miller to consumer, there are interventions which distort the real cost of delivering bread wheat flour to consumers. The government determines margins (costs) and prices (to producers and consumers) as well as quantities (imported and distributed around the subsector). The result is a real cost to the Moroccan economy of bread wheat flour well in excess of the actual official consumer price.

The model developed here quantifies all margins which currently exist between the price paid to producers and the price paid by consumers, including government transfers, and calculates the total cost to the Moroccan economy of delivering bread wheat to market. The analysis is presented at both an aggregate, sectoral level (unit costs times the quantity of wheat/ flour entering the industrial flour system) and a unit (costs per quintal) level. This actual cost is compared with 1) what it would cost to deliver that same quintal to market, assuming that the price to producers does not change, under a scenario where ONICL no longer controls the subsector, and 2) under the same liberalization scenario, what it would cost if border protection were reduced, and thus the price to producers fell.

Other CMRP activities are examining the effect of government intervention at particular points in the subsector. This cost/benefit exercise summarizes the costs of the current system. However, many of the costs can only be approximated now. Further refinement of the data awaits completion of the milling group study, the storage consultancy, the two LP analyses on transport cost minimization, and the international trade policy model which will examine the effect of border price policy on domestic prices, given domestic storage costs.

The following graph compares the cost of delivering a quintal of bread wheat FNBT to consumers under four different scenarios. The first is the current base case: farmers receive 240 DH/ql (or 300 DH/ql = 240/80%), which yields an implicit cost of 530 DH/ql of FNBT.^{1,2} The second assumes that farmers still receive 240, but margins are compressed by 5%, and the credit subsidy (warrantage), compensation, and consumer rent are eliminated.

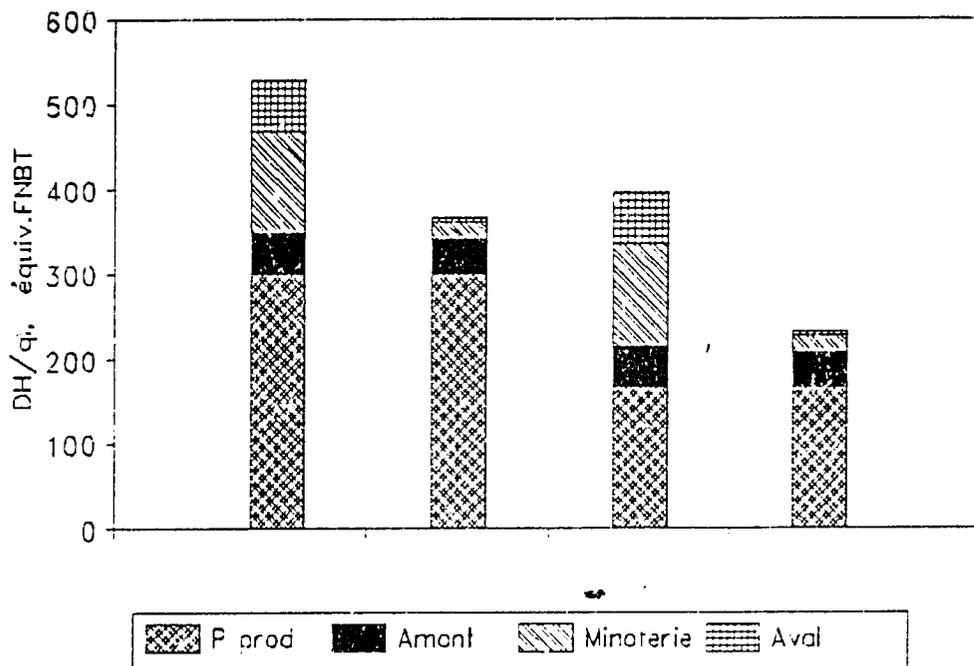
¹ Margins normally paid in DH/ql wheat are converted into FNBT equivalent by dividing by 80%.

² The actual economic cost figures presented here are preliminary, and subject to change after discussion on the inclusion of the individual line items (with Sasson, at Purdue).

This yields a cost of 367 DH/ql FNBT. The third scenario pays farmers the border price (CAF * (1 + droits de douane and prélèvement fiscal)), and retains all current margins, for an FNBT cost of 397 DH/ql. Finally, elimination of producer protection and the reduction in margins results in an FNBT price of 233 DH/ql.

COMPARAISONS DES MARGES

Scénarios de base et de libéralisation



ANALYSE DES MARGES PAR QUINTAL

(DH/ql FNBT)	Cas de base	Compression des Marges	Elimin prot	Elimin prot + compress.marges
Prix au producteur 31	300	300	167	167
Marges dans la filière FNBT				
En amont de la minoterie				
Taxe de commercialisation BT	2	2	2	2
Warrantage BT	4	4	4	4
Transport BT	6	6	6	6
Stockage BT	11	10	11	10
Marge à l'importation BT	13	12	13	12
Marge de rétro + frais d'approche B	11	11	11	11
Minoterie				
Marge de mouture BT	21	20	21	20
Compensation (résiduel)	101	101	101	101
Commission Tripartite des Minoterie	0	0	0	0
En aval de la minoterie				
Transport FNBT	6	6	6	6
Stockage FNBT	1	0	1	0
Rente payée par le consommateur	55	55	55	55
Prix économique de la FNBT	530	367	397	233

The following are the breakdowns of each component as a percentage of the total economic cost of the FNBT for each of the scenarios:

ANALYSE DES MARGES PAR QUINTAL

	Cas de base	Compression des Marges	Elimin prot	Elimin prot + compress.marges
Résumé (DH/ql FNBT)				
Prix au producteur BT	300	300	167	167
En amont de la minoterie	47	41	47	41
Minoterie	122	20	122	20
En aval de la minoterie	61	6	61	6
Prix économique de la FNBT	530	367	397	233
(en %)				
Prix au producteur BT	56.6	81.8	42.0	71.5
En amont de la minoterie	8.9	11.2	11.9	17.6
Minoterie	22.9	5.3	30.6	8.4
En aval de la minoterie	11.6	1.6	15.4	2.6
Prix économique de la FNBT	100.0	100.0	100.0	100.0

The implications of the model are striking. While the official consumer price of 200 DH/ql FNBT is no longer observed in the market, with levels of 250-275 DH/ql FNBT obtaining in most markets, the price après-libéralisation (and assuming a constant price to producers) of 367 DH/ql FNBT is at least a 33% increase over current market levels.

For the political job of convincing consumers to accept a higher price for this critical staple commodity, it seems crucial to this author that a public discussion of the 530 figure be included, so that the net savings of moving from 530 to 367 (or something lower, if the border protection level is adjusted downward) can be stressed. While this author recognizes that public discussion of such elements in Morocco has rarely a precedent, it may be interesting to some of Morocco's more sophisticated policymakers to consider such a strategy of "selling the public" by extending more, rather than less, information to the consumers directly concerned in order to orchestrate consensus before the policy change is announced.

Model structure and assumptions

The model from which the above calculations are taken compares a base case (no change) scenario, projected out over 5 years, to an alternative case (FNBT reform), similarly projected, and calculates an NPV for the savings incurred in following the latter.

The template consists of 5 main parts:

- 1) a summary section at the top, where a user-activated macro allows the analyst to specify which scenario is to be analyzed; the NPV result of the calculations is also presented here;
- 2) a data parameters section, where a host of assumptions are presented and base calculations are made; many of these parameters are currently not used in the actual calculations below, but were included here to allow for more complex modeling later on;

- 3) a quantity flows section, which projects supply and demand out over years 1 through 5, starting with a base year 0;
- 4) sectoral cost calculations section, in which unit costs (specified in the data parameters section) are applied to the quantity flows to estimate aggregate costs at the sectoral level for both the base and alternative scenarios; and
- 5) a unit cost margins analysis, which presents the four alternative scenarios as shown above.

A macro in the model allows the user to "freeze" the base case calculation and compare it to the alternative scenario. Entering "alt-a" activates the macro.³ The macro first asks the user whether to assume optimistic or conservative revenue growth rates. The cost of the base case is calculated, and those values are saved as values. The macro then asks the user to define which alternative border policy to consider⁴ and how to phase out the FNBT quota. For example, in the current model configuration a "taux d'élimination" of 90% is entered in all five years, which means that 90% of the FNBT quota is eliminated immediately and 10% will still be produced indefinitely. Other phase-out assumptions can be tested.

The alternative scenario is currently as defined by Sasson. 90% of the FNBT quota will be eliminated in the first year and the remaining 10% of the quota will remain indefinitely, to satisfy political needs relating to the Saharan province. These percentages are made explicit in the model and can be varied. At the moment, this only affects sectoral

³ The macro text is as follows:

```
{HOME}
{GOTO}f5 ~
1 ~ {GOTO}           Macro selects the base case.
f8 ~ {?} ~          Macro allows user to define revenue growth scenario.
{CALC}
{/ Block;Values} )
base ~ base ~      ) Macro saves the base case calculations as values.
{/ Block;Erase}f5 ~
{GO: O}f6 ~ {?} ~  Macro asks user to define alternative border policy.

{GOTO}f9 ~ {?} ~   )
{GOTO}f10 ~ {?} ~  )
{GOTO}f11 ~ {?} ~  ) Macro allows user to define FNBT phase-out rate.
{GOTO}f12 ~ {?} ~  )
{GOTO}f13 ~ {?} ~  )
{HOME}
```

⁴ The analyst can specify one of two border price policies, either a reference price and variable levy or a tariff equivalent of the reference being introduced, and decreasing by 5% each year (proposal currently before the GATT). The choice of border policy at the moment only affects the model indirectly. Compensation is a function of the prix de revient of FNBT and its prix sortie usine. The prix de revient of FNBT is a function of the prix au producteur and margins. The prix au producteur equals the reference price under the base case and under the reference price/variable levy scenario, while under the ad valorem tariff scenario the prix au producteur is equal to an adjusted border price.

costs in the alternative case by reducing compensation and the cost of the Commission Tripartite des Minoteries by 90%.

It is also assumed that a food security stock equal to one month of Morocco's blé tendre requirement ($= (\text{purchases} + \text{imports})/12 * 1$) will be administered by ONICL.

The data parameters section includes the following (a print-out of the model is attached here which gives the actual lines and their values; those blocks which are "redlined" indicate which lines currently are not integrated into the model):

population and population growth,
revenue growth,
production and production growth,
quantities,
prices and unit costs,
transformation ratios,
elasticities, and
future investment requirements.

Some of the given parameters are then transformed to estimate other values. For example, the prix de revient of FNBT is calculated, using ONICL's formula, once at the official producer price and once at the border price. Compensation is thus calculated twice as well. This value therefore changes, depending on what one assumes is the reigning border policy. Under the base case and prix de référence/prélèvement variable assumptions, the official price to producers is equal to the reference price. Under the ad valorem tariff assumption, the price to producers is equal to the border price times the relevant border taxes.

The basic rules of the stock/utilization section of the model are simple. Demand = consumption minus exports minus ending stocks. Supply = demand. Supply minus production minus beginning stocks = imports. In fact, what we know are production, stocks, and imports, with a lot of ??? surrounding consumption figures. The model is static; prices do not enter the model as an exogenous variable determining supply/demand; no substitution is considered between BT and other cereals on either the demand or supply side.

Production figures come from DPV. 6 agroecological zones are identified, with area and yield starting at base levels (average 1985/6-1990/1 figures) and growing at 1986-91 rates. Area and yield levels in year 5 are compared with DPV-defined constraints. Two constraints (area in bour intermédiaire and irrigation) are currently binding; Amrani needs to talk to Khadija about how those numbers should be modified.

ONICL purchases in the base year are based on average 1987-91 figures. The same ratio of A/total output is assumed to hold in years 1-5. In the alternative case, it is assumed that this same ratio represents the amount of domestic BT production going to the MIB sector. (This assumption, like many others, can be played with later.) Average beginning and ending stocks are taken from ONICL data (1987-91) prepared by Asmaa. It is assumed that stocks will increase slightly over time, at the rate of total population growth (2.58% per annum).

Consumption was originally based on 1991 population times 1985 urban and rural ble tendre consumption per capita (source: Group D, 1985 survey data). These per cap consumption figures are, however, very approximate, equal to total cereals consumption in kg/capita in all forms (grain, flour, bread, couscous, etc.) multiplied times approximate breakdowns by cereal (BT, BD, OR, MS). A 12% per capita consumption increase factor was then estimated iteratively in order to "solve" the model for known import levels.

Alternatively, I've estimated total BT availability per capita (= imports plus production divided by population), and applied an 85-91 average to both urban and rural consumption. This calculation in year 0 "yields" an import figure within 10% of what was actually imported in 86-91. Both methods for determining actual consumption levels are very imprecise. Better data could be solicited from ENNV, and entered once we know what we're talking about. We'd want to know total BT (and BD, OR, MS, for that matter) consumption per capita (kg/tête) in rural and urban areas, broken down by form (grain, FNBT, farines libres, bread (type?), couscous, pâte....).

Growth in consumption over time is equal to (1 plus the rate of (rural, urban) population growth plus the rate of (rural, urban) revenue growth (comparison of 70-71, 84-85, and 90-91 expenditure surveys; one can enter either an optimistic or a conservative income growth assumption) times the (rural, urban) expenditure elasticity for BT) (84-85, Stryker estimates). The choice of optimistic or conservative income growth determines 1) whether BT imports increase or decrease in absolute numbers over time, and obviously 2) how much farine libre is actually produced (FNBT being fixed over time).

In the base case, 10 million qx of FNBT are produced and the rest of the wheat bought by ONICL (either local purchase, A, or imports, M) goes into the production of "farines libres" (at 72% extraction rate). (NB: ONICL assumes 70% for FL.) I'm ignoring the production of PS-5, a kind of farine currently milled exclusively for the Saharan province and sold at a different price than FNBT. It is considered by ONICL to be part of the 10 mill qx, and amounts to just 3% or so of the total quota.

The current focus of the model is partial. It only considers margins actually incurred by ONICL or consumers in the BT/FNBT sector between the producer and consumer. It ignores transport and storage costs of BT and farines libres not covered by ONICL, and the milling costs of farines libres. As for transport and storage costs currently assumed by ONICL, the model assumes efficiency gains (currently set at 5%) will occur when the private sector takes over, not that the prime will be eliminated completely.

Costs in the base case are identified at several levels:

Upstream from mills

Taxe de commercialisation - 1.3 DH/ql, applied to both A+M.

Warrantage - credit subsidy, available to SCAMs, applied to the 40% of A which they control and to all of M. Originally estimated at 3.5 DH/ql by Groupe b, this figure needs to be revised downward to take account of more recent changes in interest rate policy (taux de warrantage now at 11%).

Prime de transport, BT - ONICL's total expenditure is divided by (A+M) to yield a:1 per ql transport costs from 1986/87 to 1990/91; the most recent value of 5.0 DH/ql is applied in the model.

Prime de stockage, BT - ONICL's total "prime de servie sur stockage BT" is divided by (A+M) and then by the prime de magasinage in DH/ql/mois in order to derive an average period of storage, which is then multiplied by the current prime de magasinage (3.8 DH/ql/mois) * (A+M).

Marges à l'importation - 10.39 DH/ql paid by ONICL to importers on all M. (Source: Houmy & Amrani).

Marge de rétrocession - 7 DH/ql BT, paid by ONICL on 12.5 mill qx of BT and on all M.

Frais d'approche - 2 DH/ql BT, paid by ONICL on all domestic BT purchases (A).

At mill level

Marge de mouture - 16.5 DH/ql BT, paid by ONICL on 12.5 mill qx of BT.

Rest of compensation - $315 - 182 = 133 - (7 + 2 + 16.5) / .8$, or $32 = 101$ DH/ql FNBT, paid by ONICL on 10 mill qx of FNBT.

Commission Tripartite des Minoteries = $1000 \text{ DH/mois} * 12 \text{ mois} * 3 \text{ pers/mill} * 84 \text{ mills} = 3.024 \text{ million DH}$

Downstream from mill

Prime de transport, FNBT - paid by ONICL on 10 mill qx FNBT; ONICL's most recent (1990/91) DH/ql expenditure of 5.8 DH/ql FNBT is applied.

Prime de stockage, FNBT - paid by ONICL on 10 mill qx FNBT; again, ONICL's most recent DH/ql expenditure of 0.5 DH/ql FNBT is applied.

Rent paid by consumers = Actual market price for FNBT minus official consumer price = $255 - 200 = 55 * 10 \text{ mill qx}$

These costs are added up and compared to costs incurred in an alternative scenario.

In the alternative scenario, FNBT production is reduced to 1 million qx in year 1 (or 1.25 mill qx of BT), at which level it remains until year 5. An additional 1.9 million qx are "controlled" by ONICL as a food security stock (SSA). Differences with the base scenario are as follows:

- Warrantage and consumer rent are eliminated in year 1.
- Compensation is reduced by 90% in year 1 and then maintained at a 10% level through until year 5.
- An additional storage charge is applied to 1.9 million qx of a food security stock.
- An efficiency gain of 5% is assumed become effective in year 2 for all other line items.

Other costs might include:

the cost of a domestic campaign to improve quality and classification of domestic production

the cost of investing in transport, storage, and milling infrastructure

the cost of closing down the SCAM/CMA, some mills (employment cost and well as possible compensatory payments to "losers")

Other benefits might include:

sale of SCAM/CMA, mills assets
improved consumer welfare due to greater end product diversification

Again, these costs are added up. Costs under the base case are subtracted from costs under the alternative case (- = savings).

An NPV of net gains over five years is estimated, at a discount rate of 14%. **Results indicate that the Moroccan economy could save over 4 billion DH over 5 years by liberalizing the FNBT subsector.**

Remaining issues

Identification of investment costs in the future?

Quantify increase in consumer surplus?

What about the producer subsidy $P_{prod} - P_w$?

How to distinguish between costs associated local production versus those associated with imports? At the moment, it's all lumped together.

This is a print-out of the general data parameters section of the model.

COUTS/BENEFICES D'UNE REFORME DU MARCHE DU BLE TENDRE: ANALYSE DES MARGES

Choix de scénario		Mettez 1		
-----		-----		
Scénario de base		1		
Prix de référence + élim de la FNBT				
Tarif ad valorem + élim de la FNBT				
Croissance de revenus - si optimiste, mettez 1		1		
Tx élimination, QFNBT, année 1	txelim1	90%		
Tx élimination, QFNBT, année 2	txelim2	90%		
Tx élimination, QFNBT, année 3	txelim3	90%		
Tx élimination, QFNBT, année 4	txelim4	90%		
Tx élimination, QFNBT, année 5	txelim5	90%		
Résultat du modèle				
NPV =	4.6 milliards DH épargné	14%		
		sur cinq ans		
Paramètres données	Nom du champ	Unités	Base= 1986-91	% CROISSANCE ANNUUEL
(*=calculé)	-----	-----	-----	-----
Population				
Rurale (1991)	poprur	('000)	13692	1.62%
Urbaine (1991)	popurb	('000)	12222	4.16%
Totale				2.58%
Revenues				
Rurale	%revrur			4.1%
Urbaine	%revurb			5.0%
Production myne, 1986-91				
1)Superficie en bour favorable	supbfav	(000 ha)	440	2.8%
Rendement en bour favorable	rendbfav	(Qx/ha)	18.6	2.2%
2)Superficie en bour interméd	supbint	(000 ha)	180	4.5%
Rendement en bour interméd	rendbint	(Qx/ha)	14.5	3.2%
3)Superficie en bour défav sud	supbds	(000 ha)	195	9.8%
Rendement en bour défav sud	renbds	(Qx/ha)	6.9	13.3%
4)Superficie en bour défav oriental	supbdo	(000 ha)	50	23.4%
Rendement en bour défav oriental	renbdo	(Qx/ha)	8.5	1.3%
5)Superficie en zone montagneuse	supmont	(000 ha)	40	0.0%
Rendement en zone montagneuse	renmont	(Qx/ha)	12.8	1.8%
6)Superficie en irrigué	supirr	(000 ha)	400	6.3%
Rendement en irrigué	rendirr	(Qx/ha)	18.4	2.0%
Quantités				
Qté importée BT	mbt	(000 qx)	15128	
Qté exportée BT	xbt	(000 qx)	0	
Qté achetée ONICL BT	abt	(000 qx)	8017	
% Qté achetée SCAM/CMA BT	%scam	(%)	40%	
Qté stockée BT (début)	sabt	(000 qx)	1508	
Qté stockée BT (final)	sfbt	(000 qx)	1739	
Qté stock sécurité alim BT	ssabt	(000 qx)	1900	
Nombre de mois d'approvisionnement			1	
Qté consommée BT/capita (urbain)	curbbt	(qx/cap)	1.02 en 1985	
Qté consommée BT/capita (rural)	crurbt	(qx/cap)	1.45 en 1985	
% augm. C/tête depuis 1985	%ctete	(%)	12%	
Qté disponible BT/capita (Q+M)/pop	disppt	(qx/cap)	1.44	
Qté produite FNBT	qfnbt	(000 qx)	10000	
Prix				
Prix officiel BT	popbt	(DH/ql BT)	240	
Prix parallèle BT	ppbt	(DH/ql BT)	280	
Marge de rétrocession BT	mretobt	(DH/ql BT)	7	
Frais d'approche BT	frappbt	(DH/ql BT)	2	
Marge de mouture BT (officielle)	mmot	(DH/ql BT)	16.5	
Taxe de commercialisation ONICL	txcommot	(DH/ql BT)	1.3	
Prime de transport BT	transbt	(DH/ql BT)	5.0	
Prime de transport FNBT	transfnbt	(DH/ql FNBT)	5.8	
Prime de stockage BT	sahbt	(DH/ql BT)	8.7	
Prime de stockage FNBT	sdhfnbt	(DH/ql FNBT)	0.5	
Transp/manut, farines libres	transfl	(DH/qt FL) ??		
Stockage, farines libres	sdhfl	(DH/qt FL) ??		
Coût du warrantage BT	warrant	(DH/ql BT)	3.5	
* Prix de revient FNBT (prod)	prevfnbt	(DH/ql FNBT)	315	
Prix sortie usine FNBT	psufnbt	(DH/ql FNBT)	182	
Prix officiel au consommateur FNBT	poofnbt	(DH/ql FNBT)	200	
Prix parallèle FNBT	ppfnbt	(DH/ql FNBT)	255	
Prix parallèle FL	ppfl	(DH/qt FL)	340	
Prix indicatif du son	ps	(DH/ql son)	115	
* Compensation FNBT (prod)	compfnbt	(DH/ql FNBT)	133	
* Rente FNBT	rentfnbt	(DH/ql FNBT)	55	

Prix mondial FOB BT (\$)	pmfobbt	(\$/t BT)	130
Bonus à l'exportation	bonus	(\$/t BT)	35
Assurance, frêt BT	afbt	(\$/t BT)	22
Marge à l'importation BT	mimpbt	(DH/qt BT)	10.39
* Prix mondial CAF BT (DH)	pmcafbt	(DH/qt BT)	110
* Prix CAF BT (DH), majoré des DD/PFI	pmcaf'bt	(DH/qt BT)	126
* Prix de revient FNBT (M)	prevmfnb	(DH/qt FNBT)	152
* Compensation FNBT (M)	compmfnb	(DH/qt FNBT)	-30
Droit de douane BT	ddbt	%	2.5%
Prélèvement fiscal à l'importation	pfibt	%	12.5%
Prix de référence BT	prefbt	(DH/qt BT)	240
* Prélèvement variable	prelvar	(DH/qt BT)	114
* Equivalent tarifaire, Pref	equiytar	%	1.03
Tarif ad valorem BT	advalbt	%	1.03
Réduction ann. de la prot. tarif.	%advalbt	%	5%
Elasticités			
Elasticité-dépense rurale	edrur	%	0.534
Elasticité-dépense urbaine	edurb	%	0.381
Elasticité-prix rurale	epurur	%	-1.911
Elasticité-prix urbaine	epurb	%	-1.274
Facteurs de conversion			
Taux de change	tc	(DH/\$)	8.50
FNBT/BT	%fnbt/bt	%	0.80
FL/BT	%fl/bt	%	0.72
Son/BT (FNBT)	%son/bt	%	0.20
Son/BT (FL)	%sfl/bt	%	0.28
Minoteries			
Industriels	#iib	nombre	
Artisanales	#iab	nombre	
Coûts généraux			
Investissements			
Infra minoteries	inframim	(millions DH)	
Infra stockages	infrastoc	(millions DH)	
à la ferme	infrasterm	(millions DH)	
à la minoterie	infrasmin	(millions DH)	
au port	infrasport	(millions DH)	
Infra transport	infratrans	(millions DH)	

The following is a print-out of the quantity flows section of the model:

FLUX DES QUANTITES ('000 qx)	Année 0	Année 1	Année 2	Année 3	Année 4	Année 5
Production BT						
1)Superficie en bour favorable	440	452	465	478	491	505
Rendement en bour favorable	19	19	19	20	20	21
2)Superficie en bour interméd	180	185	190	195	201	206
Rendement en bour interméd	15	15	15	15	16	16
3)Superficie en bour défav sud	195	200	206	212	218	224
Rendement en bour défav sud	7	7	7	7	8	8
4)Superficie en bour défav oriental	50	51	53	54	56	57
Rendement en bour défav oriental	9	9	9	9	9	9
5)Superficie en zone montagneuse	40	41	42	43	45	46
Rendement en zone montagneuse	13	13	13	14	14	14
6)Superficie en irrigué	400	425	452	480	510	542
Rendement en irrigué	18	19	19	20	20	20
Production locale (Q)	20437	21712	23071	24522	26069	27720
Achat production locale BT (A)	8017	8517	9051	9620	10227	10874
Importations BT (M)	13542	13997	14458	14925	15396	15870
Taux d'autosuffisance	58%	58%	59%	60%	60%	61%
Stockage début BT	1508	1547	1587	1628	1670	1713
OFFRE TOTALE BT	35486	37256	39117	41075	43135	45303
Consommation BT						
Milieu urbain	17557	18621	19751	20949	22219	23567
Milieu rural	19668	20418	21195	22003	22841	23711
Exportations BT	0	0	0	0	0	0
Stockage final BT	1739	1783	1829	1877	1925	1975
DEMANDE TOTALE BT	35486	37256	39117	41075	43135	45303

The following is a print-out of the sectoral cost scenarios (base case and alternative):

SCENARIO DE BASE (millions DH)

MARGES DU SYSTEME ACTUEL (coûts)

En amont de la minoterie						
Taxe de commercialisation BT (A+M)	28	29	31	32	33	35
Warrantage BT (A+M)	59	61	63	66	68	71
Prime de transport BT (A+M)	108	113	118	123	128	134
Prime de stockage BT (A+M)	188	197	205	215	224	234
Marges à l'importation (M)	141	145	150	155	160	165
Marge de rétrocession BT (A+M)	151	158	165	172	179	187
Frais d'approche BT (A)	16	17	18	19	20	22
Au niveau de la minoterie						
Marge de mouture BT (FNBT)	206	206	206	206	206	206
Compensation (résiduel) FNBT	1008	1008	1008	1008	1008	1008
Commission Tripartite des Minoteries	3	3	3	3	3	3
En aval de la minoterie						
Prime de transport FNBT	58	58	58	58	58	58
Prime de stockage FNBT	5	5	5	5	5	5
Rente payée par le consommateur FNBT	550	550	550	550	550	550
COÛTS TOTAUX (millions DH)	2520	2549	2580	2611	2643	2677

SCENARIO ALTERNATIF

% GAINS

		10%	10%	10%	10%	10%
TAUX D'ELIMINATION DE LA FNBT		10%	10%	10%	10%	10%
TAUX DE GAIN D'EFFICIENCE SUPPOSE	5%					
MARGES DU SYSTEME ALTERNATIF (coûts)						
En amont de la minoterie						
Taxe de commercialisation BT (A+M)	28	29	31	32	33	35
Warrantage BT (A+M)	59					
Prime de transport BT (A+M)	5% 108	113	112	117	122	127
Prime de stockage BT (A+M)	5% 188	197	195	204	213	222
Marges à l'importation (M)	5% 141	145	143	147	152	157
Marge de rétrocession BT (A+M)	5% 151	158	156	163	170	178
Frais d'approche BT (A)	5% 16	17	17	18	19	21
Frais de gestion, SSA		17	17	17	17	17
Au niveau de la minoterie						
Marge de mouture BT (FNBT)	5% 206	206	196	196	196	196
Compensation (résiduel) FNBT	1008	101	101	101	101	101
Commission Tripartite des Minoteries	3	0	0	0	0	0
En aval de la minoterie						
Prime de transport FNBT	5% 58	58	55	55	55	55
Prime de stockage FNBT	5% 5	5	5	5	5	5
Rente payée par le consommateur FNBT	550					
COÛTS SUPPLEMENTAIRES						
Fermeture des minoteries	??	??	??	??	??	??
Augmentation du chômage	??	??	??	??	??	??
INVESTISSEMENTS SUPPLEMENTAIRES						
Infrastructure des minoteries	0					
Infrastructure du système stockage						
à la ferme	0					
à la minoterie	0					
au port	0					
Infrastructure transport	0					
GAINS DU SYSTEME ALTERNATIF						
Vente des biens des SCAM/CMA	??	??	??	??	??	??
Vente des biens des minoteries	??	??	??	??	??	??
COÛTS TOTAUX (millions DH)	2520	1046	1027	1055	1083	1112
GAINS TOTAUX (millions DH)	0	0	0	0	0	0
Coûts nets totaux (millions DH)	2520	1046	1027	1055	1083	1112
Coûts marginaux (millions DH)	0	-1504	-1552	-1556	-1560	-1564
NPV @	14%	-4649	épargné			