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SYRIA

AGRICULTURAL SECTOR SURVEY

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CURRENCY EQUIVALENTS

Currency Unit = Syrian pound (LS)
(December 1985)

Official rate:	US$1.00 = LS 3.95	LS 1.00 = US$0.253
Parallel rate:	US$1.00 = LS 4.45	LS 1.00 = US$0.183
Tourist rate (buying):	US$1.00 = LS 8.25	LS 1.00 = US$0.121
Tourist rate (selling):	US$1.00 = LS 11.25	LS 1.00 = US$0.089

ABBREVIATIONS

ACSAD	Arab Center for Studies of Arid Zones and Dry Lands
ARC	Agricultural Research Council
CAB	Cooperative Agricultural Bank
DAR	Directorate of Animal Research
DASR	Directorate of Agricultural Scientific Research
DIR	Directorate of Irrigation Research
DOE	Directorate of Extension
DSL	Directorate of Soils and Lands
EFR	Emergency Feed Reserve
GCFV	General Company for Fruits and Vegetables
GOAM	General Organization for Agricultural Mechanization
GOCGM	General Organization for Cotton Ginning and Marketing
GOEDEB	General Organization for Exploitation and Development of the Euphrates Basin
GOF	General Organization for Feed/Fodder
GOLD	General Organization for Land Development
GOPC	General Organization for Public Consumption
GOS	General Organization for Sugar
GOT	General Organization for Tobacco
GOTPC	General Organization for Trade and Processing of Cereals
GDP	Gross Domestic Product
HYV	High Yielding Variety
ICARDA	International Center for Studies of Arid Zones and Dry Lands
MAAR	Ministry of Agriculture and Agrarian Reform
MOI	Ministry of Irrigation
NFRF	National Feed Revolving Fund
NPC	Nominal Protection Coefficient
O&M	Operation and Maintenance
SPC	State Planning Commission

This report was prepared by an agricultural sector mission which visited Syria in November/December 1985. The mission comprised Messrs/Mmes. A. Nyberg, H. Nasr, G. Lituma, I. Tsakok (Bank), N. Khaldi and A. Bichara (consultants).

SYRIA

AGRICULTURAL SECTOR SURVEY

Table of Contents

Text Tables

Annexes

Maps

قضايا مختارة في قطاع الزراعة

ملخص

الاداء

١- خلال السنوات العشر ١٩٧٥ - ١٩٨٤، حقق الاقتصاد السوري (اجمالي الناتج المحلي بالاسعار الثابتة) معدل نمو سريع بلغ ٨ر٤٪ سنويا. وشهد القطاع الزراعي الذي يضم ٤٨٠ر٠٠٠ من فلاحي القطاع الخاص نموا مماثلا، فزادت قيمة الانتاج الزراعي بمعدل ١ر٥٪ سنويا. وكان اكبر عامل مؤثر في النمو الزراعي هو الزيادة السريعة في قيمة الانتاج الحيواني التي بلغت ٤ر٨٪ سنويا، في مقابل ٩ر٣٪ للانتاج المحصولي. غير ان النمو كان انشط واقوى في النصف الاول من العقد المذكور، وخلال النصف الثاني هدأ النمو اولا ثم بدأ في الهبوط في عام ١٩٨٤ .

٢- وبالنسبة لمجموعة المواشي، زاد انتاج الدواجن والبيض والاغنام بمعدلات سنوية سريعة غير عادية بلغت ٢٧٪ و ١٢٪ و ١٠٪ على التوالي. اما بالنسبة للمحاصيل، فكان النمو المتواصل اكثر وضوحا بالنسبة لانتاج المحاصيل الصناعية المزروعة في الاراضي المروية مثل القطن والشوندر السكري ومحاصيل الاشجار المثمرة في الاراضي المروية والبعلية على السواء، وخاصة التفاح والحمضيات، وكذلك الزيتون والعنب واللوزيات، كما تحسنت غلة المحاصيل (باستثناء التفاح)، واصبحت غلة القطن من بين اعلى المعدلات في العالم.

٣- اتاحت الزيادات في الانتاج الزراعي لسوريا تحقيق بعض اهداف الاكتفاء الذاتي. فتحقق الاكتفاء الذاتي من الخضار والفواكه والمواشي (اللحوم)، واستمر الاكتفاء الذاتي من منتجات الدواجن. غير ان انتاج الحبوب الذي ظل ثابتا نسبيا، مقترنا بالمعدل السريع للنمو السكاني، احدث هبوطا في معدل الاكتفاء الذاتي من الحبوب واكتفاء ذاتيا مستقرا من الانتاج الزراعي بشكل عام. وادخلت معايير تكلفة الفرصة البديلة بصورة ملائمة في سياسات الاكتفاء الذاتي من السكر مما ادى الى تخفيض وتجميع انتاج الشوندر السكري في عام ١٩٨٥.

٤- توسعت قاعدة الموارد بدرجة هامشية خلال السنوات العشر، بزيادة المساحات المروية بمعدل ١٠٠ر٠٠٠ هكتار. وتمثل الاراضي المروية حاليا اقل من ٢٠٪ من اجمالي المساحة المزروعة ولكنها تنتج حوالي ٥٠٪ من قيمة الانتاج المحصولي. وزادت نسبة كثافة الزراعة في الاراضي المروية ١٠٪ تقريبا لتبلغ ١٣٠٪، مما يتيح مجالا واسعا لمزيد من التحسن لان الكثافة الممكنة للزراعة تتراوح بين ١٨٠٪ و١٩٠٪ في معظم الاراضي المروية في حوض الفرات. كما زاد استخدام مستلزمات الانتاج المادية الاخرى مثل الاسمدة والجرارات بمعدلات سنوية بلغت ١٠٪. وزادت القروض المقدمة من المصرف التعاوني الزراعي بنسبة ١٨٪ سنويا (بالقيمة الاسمية)، مع تحقيق القروض طويلة الاجل (لتنمية البساتين والاراضي) اسرع معدل نمو.

٥- تقلبت اسعار الصرف المختلفة المطبقة على الصادرات والواردات الزراعية، مما جعل من المتعذر قياس التغيرات في قيمتها الحقيقية. وقد زادت الصادرات الزراعية بالقيمة الجارية بمعدل سنوي بلغ ٧ر٤٪، مقابل معدل نمو بلغ ٥ر١٠٪ لاجمالي الصادرات. غير انه بسبب نمو الواردات الزراعية بمعدل ١٢٪، استمر الميزان التجاري الزراعي في الهبوط، رغم ان معدل الاكتفاء الذاتي ظل ثابتا. وخلال هذه الفترة، شهدت سوريا تقلبات شديدة في معدلات التبادل التجاري، اذ تحسنت بنسبة ٢٥٪ بين عامي ١٩٧٥، ١٩٧٩ وهبطت بنسبة ٣٠٪ بين عامي ١٩٨٠، ١٩٨٤.

٦- كان اداء القطن، وهو سلعة التصدير الزراعية الرئيسية، جيدا جدا. فزادت الصادرات الفعلية من شعر القطن بنسبة ٥٠٪ والمنسوجات القطنية باكثر من الضعف. وزادت قيمة صادرات القطن والمنتجات القطنية (الشعر والغزل والمنسوجات والملابس) بمعدل سنوي بلغ ٤ر٨٪، وتجاوزت ٧ر١ مليار ليرة سورية في عام ١٩٨٤. غير ان النمو السكاني وانماط الاستهلاك المتغيرة والجفاف ادت كلها الى زيادات سريعة في واردات الحبوب، فتضاعفت اكثر من خمسة امثال بين عامي ١٩٧٥ و١٩٨٤. وتجاوز معدل النمو السنوي في قيمة واردات الحبوب ٢٠٪ خلال السنوات العشر. ويشكل القمح ودقيق القمح حوالى ثلثي الحبوب المستوردة.

القيود والامكانيات المحتملة

٧- يستدعي الوضع لاستعادة مسار النمو الذي تمتعت به سوريا في اواخر السبعينات، ولتحقيق هدف تحسين الايرادات والمدخرات من النقد الاجنبي بصورة افضل، تخفيف بعض القيود التي تعرقل النمو. وتشكل الموارد الطبيعية من الاراضي والمياه معوقات شديدة للانتاج. فمعظم الاراضي صخرية او ملحية او قاحلة او كل هذه العيوب معا، ولا تزال معظم الموارد المائية غير مستغلة بدرجة كافية. وتتلقى مساحة تمثل ١٥٪ فقط من الاراضي امطارا تبلغ ٣٥٠ ملليمترا او اكثر، وهو الحد الادنى من الامطار اللازم للمحاصيل البعلية (باستثناء الشعير) بدون الحاجة الى ري اضافي. وعلاوة على ذلك فان اكثر من ٥٠٪ من هذه المساحة التي تتلقى امطارا اعلى من الحد الادنى صخرية اكثر من اللازم او غير صالحة للزراعة لاسباب اخرى.

٨- يزرع سنويا حوالي ٤ ملايين هكتار (لا تدخل فيها الاراضي المتروكة للراحة)، منها ٦٠٠ر٠٠٠ هكتار اراضي مروية. ويمكن زيادة قاعدة الاراضي المزروعة بزيادة المساحة المروية وباستصلاح الاراضي عن طريق ازالة الصخور. وتوجد موارد مائية كافية لري ٩٠٠ر٠٠٠ هكتار اضافية، وتقدر المساحة القابلة للاستصلاح عن طريق ازالة الصخور بحوالي ٦٨٠ر٠٠٠ هكتار. وهكذا يمكن توسيع قاعدة الاراضي بدرجة كبيرة، ولكن القيد المالي الذي يفرضه العجز الكبير في الميزانية يؤكد الحاجة الى تنمية الموارد بكفاءة وتحسين الانتاجية.

٩- يمكن تعزيز التنمية الزراعية بادخال تحسينات على اطار السياسة والمؤسسات. ويتم العمل على تحقيق هدف الاكتفاء الذاتي الذي تنشده الحكومة عن طريق تطبيق سياسات متسقة داخليا تتعلق بالاسعار والانتاج والتسليف. غير ان هذه السياسات لا تتمشى مع الاهداف الاخرى اي تحسين الانتاجية وزيادة الايرادات والمدخرات من النقد الاجنبي. وتوضع سياسة تسعير السلع الاستراتيجية على اساس تقديرات تكلفة الانتاج، دون اتخاذ قوى العرض والطلب المحلية والدولية في الاعتبار. وتستهدف سياسة الانتاج (الترخيص بزراعة

المحاصيل) تحقيق اهداف معينة تتعلق بالانتاج الفعلي لمواجهة احتياجات الاكتفاء الذاتي، مع اغفال قيمة الانتاج. وترتبط سياسات التسليف وتوزيع مستلزمات الانتاج ارتباطا وثيقا بسياسة الانتاج، حيث لا تتاح مستلزمات الانتاج والقروض الا للمنتجين الذين يطبقون خطة انتاج معتمدة. وتؤدي هذه المجموعة من السياسات الى قصور في كفاءة تخصيص الموارد، بمعنى ان المستلزمات المرتفعة القيمة تخصص في احيان كثيرة لانتاج سلع منخفضة القيمة.

١٠- ادى سعر الصرف المحدد باعلى من القيمة الحقيقية لليرة السورية والاسعار السائدة للسلع المحلية والدولية، الى وضع سوريا في موقف مالي غير موات بالنسبة لانتاج معظم المحاصيل والاتجار فيها. وعلى الرغم من ان انتاج القطن يتسم بالكفاءة فنيا، فان سعر الصرف وهيكل الاسعار يؤديان الى خسائر مالية ودعم لصادرات القطن. وقد ادى ذلك الوضع بدوره، مقترنا بدعم اسعار السلع الاستهلاكية، الى استنزاف خطير للخزانة العامة وتحويل الموارد المالية بعيدا عن الاستثمارات الممكنة في مشروعات البنية الاساسية الزراعية. ومن شان تعديل سعر الصرف واتباع سياسة تسعير اكثر كفاءة ان يخفف شدة هذا الاستنزاف المالي.

١١- تسيطر مؤسسات القطاع العام على معظم عمليات التسويق الداخلي والتجارة الخارجية. وتقتصر في الغالب عمليات الشراء والبيع على الكثير من هذه المؤسسات. وتركز السياسة التسويقية على احلال مؤسسات القطاع العام محل القطاع الخاص، لافتراض حدوث "استغلال من الوسطاء". ونتيجة لذلك، لا تشجع استثمارات القطاع الخاص، وتمثل الموارد الحكومية الجزء الاكبر من الاستثمارات في البنية الاساسية للتسويق الزراعي. غير ان الحكومة لم تتمكن من تعبئة موارد كافية لتوفير استثمارات ملائمة لمشروعات البنية الاساسية التسويقية والتصنيعية، خاصة بالنسبة لصناعة القطن. ويمكن تعبئة موارد اضافية باتاحة قدر اكبر من المساهمة من خارج القطاع العام (التعاونيات والافراد). ويتفاوت اداء المؤسسات شبه الحكومية، اذ يبدو ان بعضها يعمل بكفاءة

(مؤسسة الاقطان) بينما يبدو ان البعض الآخر (مؤسسة الخضار والفواكه) اقل كفـــاءة من مؤسسات القطاع الخاص. وربما امكن تحسين الاداء باتاحة قدر اكبر من المنافسة والسماح بدرجة اكبر من مرونة التصرف لمديري المؤسسات شبه الحكومية (مثل تخويلهم سلطـــة تقديرية لتحديد الاسعار).

١٢- ركزت السياسة والاستثمارات الخاصة بالري على المشروعات الكبيرة التي تستغرق وقتا طويلا حتى تدل الى مرحلة التشغيل والانتاج، والتي يتركز اغلبها في حوض الفـــرات. ونتيجة لتفضيل الانشاءات الضخمة، وجه اهتمام اقل نسبيا الى الاستثمارات في مشروعـــات البنية الاساسية الاخرى. وتعتبر المنافع المحتملة لهذه الاستثمارات المعتمدة علـــى تكثيف رأس المال هامة، ولكن من الضروري توجيه استثمارات اضافية لمشروعات الـــري والبحوث وتوعية الفلاحين، على مستوى المزرعة، لتتم الاستفادة من هذه المنافع.

١٣- تشمل التحسينات الاخرى في الهياكل المؤسسية التي يمكن ان تعزز التنميـــة الزراعية تقديم الخدمات الارشادية، واجراء البحوث وتوفير القروض ومستلزمات الانتـــاج. وتضطلع الحكومة بتطوير الخدمات الارشادية والبحوث عن طريق برنامج ارشاد وطني ينفـــذ بمساعدة البنك، كما تم في الآونة الاخيرة توسيع نطاق البحوث في مجال تربية المواشـــي والري. ويمكن تحقيق منافع من توسيع نطاق برنامج البحوث ولكن في ضوء القوى البشرية والموارد المالية المحدودة، ينبغي تحديد اولويات البحوث. ويتمشى توفير القـــروض ومستلزمات الانتاج مع سياسة الانتاج المطبقة حاليا، ولكن اذا تحررت هذه السياســة فان المصرف التعاوني سيواجه عندئذ نقصا في عدد الموظفين اللازمين لتقييم طلبات القـــروض الاضافية.

الاستراتيجية

١٤- ادت اهداف تحقيق الاكتفاء الذاتي وزيادة الايرادات والمدخرات من النقد الاجنبي الى تركيز الاهتمام على الكميات الفعلية وعلى السلع التي تتحمل اكبـــــر قدر من المسؤولية عن الميزان التجاري السلبي (السكر والحبوب). وهذه الاهداف ملائمة، ولكـــن اعادة تفسيرها واعادة صياغة السياسات التي تدعمها سوف يتيح تحقيقها بقدر اكبـــر من

الكفاءة. ولو فسر الاكتفاء الذاتي تفسيرا اقتصاديا ومنحت الصادرات والواردات قدرا متساويا من الاهتمام، لاصبحت هذه الاهداف متكاملة. ويستحسن ان تتضمن الاستراتيجية سياسات ملائمة تتعلق باسعار الصرف والتسعير، وهو امر سيتيح للاسعار المحلية ان تعكس الاسعار المقارنة للسلع في الدول المجاورة. وستكون السياسات الانتاجية والتجارية القائمة على نظام تسعير كهذا متسقة وستدعم الاهداف المذكورة اعلاه. وعلاوة على ذلك فانها ستلغي الحاجة الى معظم تراخيص زراعة المحاصيل وما يترتب عليها من نقص كفاءة تخصيص الموارد. وستكون قرارات الانتاج التي يتخذها الفلاحون على اساس حوافز الاسعار متمشية تماما مع هدف زيادة الانتاجية وكفاءة استخدام الموارد.

١٥- لا تكفي المعلومات المتاحة عن القطاع الزراعي لتحديد حلول محددة لبعض القيود التي تعاني منها القطاعات الفرعية. ومن المقترح اجراء دراسة عن قطاع الري الفرعي لتحديد الاولويات عن طريق استعراض مشروعات استغلال المياه وتقييم التكاليف الاستثمارية والمنافع، وتقييم استخدام المياه والتحكم فيها على مستوى المزرعة. ومن المقترح كذلك اجراء استعراض لمشروعات ازالة الصخور من الاراضي لتحديد المزايا النسبية للعمليات البديلة لاستصلاح الاراضي.

١٦- يبدو ان البحوث الزراعية والتكنولوجيا التطبيقية المحدودة تشكل قيدا على تحسين انتاجية الارض والعمالة. وقد توسعت البحوث في الآونة الاخيرة في مجالات عديدة مثل تربية المواشي والميكنة والري على مستوى المزرعة. ومن المقترح اعادة النظر في الاوجه التنظيمية والفنية لنظام البحوث لتحديد القيود الرئيسية والمساعدة في ايجاد طريقة لتحديد الاولويات مستقبلا.

التوصيات

١٧- تؤكد موارد الميزانية المحدودة الحاجة الى استخدام الموارد الحكومية بكفاءة. ولذلك نوصي بتوجيه الاهتمام الى (١) خلق بيئة مواتية لتعبئة موارد القطاعين الخاص والتعاوني، (٢) تحسين كفاءة استخدام الموارد، (٣) توجيه الموارد الحكومية نحو

الانشطة التي تحقق عائدات عالية نسبيا، ولكن لا يحتمل ان تستثمر فيها القطاعات الاخرى. وتشكل هذه المعايير اساس التوصيات التالية التي تستهدف تشجيع تحقيق نمو زراعي متواصل. وتاخذ التوصيات في الاعتبار ضمنا اهتمام الحكومة بادارة وتوجيه عملية تخصيص الموارد بشكل عام، وبالقضايا المتعلقة بالانصاف في توزيع الدخل والاستهلاك، وبالتكييف القطاعي المنظم. وتتناول التوصيات بالضرورة مجالات خاصة بسياسات خارج نطاق قطاع الزراعة، وتتضمن هياكل الاسواق والمؤسسات الزراعية. وبينما تعني بعض التوصيات اجراء تغييرات هامة في السياسة (سياسات التسعير والتسويق) فان البعض الآخر يمكن تنفيذه داخل اطار الهياكل القائمة حاليا (السياسات الخاصة بالبحوث والري). ولضمان عملية انتقالية منظمة، يستحسن ان تسير التغييرات في السياسة وفقا لجدول تنفيذي متدرج المراحل.

١٨- تعتبر سياسة اسعار الصرف قضية ملحة، تقيد النمو في قطاع الزراعة والقطاعات الانتاجية الاخرى، ذلك ان الهيكل الحالي لاسعار الصرف المطبقة بالنسبة لعمليات تمويل الواردات وايرادات الصادرات يخل بعملية تخصيص الموارد، اذ يقدم دعما ضمنيا للواردات ويفرض رسوما على الصادرات بينما يتطلب في نفس الوقت دعما صريحا للصادرات لتغطية الخسائر المالية. ونوصي بتوحيد اسعار الصرف المتعددة في سعر واحد عند مستوى يعكس بصورة انسب القيمة الحقيقية لليرة السورية (الفقرة ٣-٣٣).

١٩- السياسة التجارية: تنحصر عدة انشطة في مجال التجارة الخارجية في مؤسسات القطاع العام، وقد يكون من الضروري الاحتفاظ ببعض هذه الانشطة كما هي، ولكن نوصي بتحرير السياسة التجارية لاتاحة قدر اكبر من المشاركة من جانب القطاع الخاص (الفقرة ٣-٣٥) لضمان الكفاءة في مجال التجارة الخارجية. ويجب مواصلة نظام حسابات الاحتفاظ بحصة من النقد الاجنبي كحافز للتصدير، الى ان يصبح ممكنا ضمان تامين النقد الاجنبي الذي يحتاجه المصدرون للاستيراد عن طريق النظام المصرفي (الفقرة ٣-٣٤). ونوصي ايضا باتباع استراتيجية ايجابية لتشجيع الصادرات مع تقديم دعم مؤسسي حكومي لاستطلاع الاسواق الخارجية وتوسيع نطاق التسويق (الفقرة ٣-٣٥). وتمثل الخدمات الاعلامية ومراقبة الجودة عنصرين رئيسيين في استراتيجية التصدير.

٢٠- التسعير: نوصي باطلاق حرية الاسعار عن طريق الغاء الضوابط على الاسعار وهوامش التسويق، وبذلك تتاح لقوى السوق فرصة لتحديد الاسعار. ويمكن ان يتم الغاء ضوابط الاسعار تدريجا لتحقيق تكيف منظم. وخلال فترة انتقالية وحيثما يعتقد ان ضوابط الاسعار ضرورية لاسباب اجتماعية، نوصي باستخدام اسلوب تسعير يعتمد على كفاءة تخصيص الموارد (باستخدام اسعار الحدود) (الفقرة ٣-٧٣). وسوف يشكل ذلك اساسا لتحديد الاسعار. فاذا قررت الحكومة اختيار مستوى سعري بديل كحافز او كدعم، فان اسعار الحدود ستوفر للحكومة الاساس لتحديد الكلفة الاقتصادية لاستخدام السعر البديل.

٢١- التسويق: نوصي بتحرير هيكل الاسواق المحلية للسماح بقدر اكبر من المشاركة من جانب القطاع الخاص، ويستحسن ان تركز السياسة التسويقية على الكفاءة، ومن المقترح ان يشارك القطاع الخاص بدرجة اكبر لتشجيع الكفاءة عن طريق المنافسة (الفقرة ٣-٧٣). فمثلا، سيشجع قيام مؤسسات القطاع الخاص او القطاع التعاوني او كليهما بحلج وتسويق الاقطان على الكفاءة القائمة على المنافسة، ويمكن ان تبقى عمليات التصدير محصورة في المؤسسة العامة لحلج وتسويق الاقطان او اى مؤسسة تسويق خارجي اخرى. ونظرا لانحصار النشاط في اجزاء كبيرة من هيكل الاسواق في القطاع العام، فنوصي بان تتبنى الحكومة سياسة واضحة تترك بموجبها اجزاء من الاسواق للقطاع الخاص. وبدون مثل هذه السياسة الواضحة، فان القطاع الخاص قد لا يكون مستعدا للاستثمار في مشروعات البنية الاساسية الخاصة بالاسواق. ونوصي بتركيز جزء كبير من الاستثمارات الحكومية في الانشطة التي تجعل التسويق اكثر كفاءة، ويتضمن ذلك توفير المعلومات ومراقبة الجودة ومعايير تدريج السلع عند تصنيفها.

٢٢- الدعم: لتخفيض الاستنزاف المالي، نرى توجيه الاهتمام نحو الالغاء التدريجي للدعم بقدر المستطاع. واذا رئي انه من الملائم دعم الفئات ذات الدخل المنخفض، فنوصي بان ينفذ الدعم باستخدام وسائل انتقائية مثل قسائم التوزيع المقنن للسلع (بطاقات التموين) بحيث يقتصر الدعم على فئات محددة مستهدفة (الفقرة ٣-٧٣).

٢٣- البحوث: نوصي بانشاء مجلس للبحوث الزراعية لصياغة وتوجيه سياسة البحوث بشكل عام، وبتعيين منسق للبحوث يتولى تنسيق اعمال مديريات البحوث ورفع تقارير الى معاون الوزير (الفقرة ٣-٧٩). كما نوصي بان تكون اولويات البحوث قائمة بدرجة اكبر على اساس المعايير الاقتصادية، بما في ذلك المنافع التي تعود من تحقيق هدف البحث. كما نرى ضرورة ادخال كفاءة استخدام المياه في برنامج البحوث. ويؤدي استخدام كميات موحدة من الاسمدة بصرف النظر عن ظروف التربة والمناخ الى نقص في كفاءة تخصيص الموارد (الفقرة ٣-٨١). كما يتعين ان تحدد البحوث انواع الاسمدة التي يوصى باستخدامها بالنسبة للمحاصيل المختلفة وفي المناطق المختلفة.

٢٤- التسليف: نوصي باعادة النظر في اسعار الفائدة على القروض الزراعية كاحد عناصر الهيكل العام لاسعار الفائدة، وذلك بهدف تطبيق اسعار فائدة حقيقية ايجابية. وعلى اية حال، يوصى بالغاء نظام منح السلف طويلة الاجل دون تقاضي اي اسعار للفائدة. ويمكن اضافة الفائدة على القروض المقدمة لزراعة الاشجار الى اصل القروض اثناء سنوات الزراعة. ونوصي بالسماح بعقد صفقات ائتمانية مرنة في اطار الحدود الفنية التي تسفر عنها البحوث (الفقرة ٣-٩٣).

٢٥- الري: من اجل كفاءة التخطيط وتحديد مدى توفر المياه وضمان استخدام المياه بكفاءة، يحتاج الامر الى التوصل الى اتفاقية بشأن الاقتسام الدولي لمياه نهري الفرات ودجلة. واذا اريد الاسراع بخطى النمو الزراعي، يجب توسيع وتحسين البنية الاساسية للري. وتمشيا مع اقتراحات الحكومة، نوصي بتركيز الاستثمارات في مجال الري على المشروعات الجاري تنفيذها بدلا من البدء في مشروعات جديدة. ونوصي بان تكون الميزانيات والمخصصات المالية وتكوين هيئات موظفي المشروعات متناسقة لاتاحة الفرصة لاستكمال المشروعات المعلقة في مواعيدها (الفقرة ٣-١١٣).

٢٦- تشمل التوصيات الاخرى المتعلقة بالري ما يلي: (١) انشاء هيئة وطنية لموارد المياه لتنسيق السياسة المائية العامة، (٢) تحديث الخطة العامة للمياه، ويتضمن ذلك تحقيق توازن بين الاراضي والمياه بحيث يشمل ذلك امكانية استغلال المياه الجوفية، (٣) تنفيذ مشروعات ري على مستوى المزرعة وتقديم مشورة فنية للفلاحين حول استخدام المياه بكفاءة، (٤) وضع برنامج للتشغيل والصيانة على جميع المستويات، (٥) تحصيل ثمن المياه لاستعادة تكلفة انتاجها.

٢٧- <u>الانتاج المحصولي:</u> نظام الترخيص بزراعة المحاصيل وسيلة تستهدف المساعدة في تحقيق الاكتفاء الذاتي وضمان تنفيذ الدورات الزراعية السليمة. ونوصي بتحرير هذا النظام، رغم انه يمكن الاحتفاظ بشكل من اشكال الترخيص بالنسبة لمحاصيل مثل التبغ الذى يعانى من قيود تسويقية شديدة، كما نوصي بان يتم بصورة اوضح ادراج تخطيط الموارد المائية وكفاءة استخدام المياه وبصفة خاصة المزايا النسبية للبدائل، في عملية تخطيط وتشجيع الانتاج المحصولي (الفقرتان ٣-١٢٧ و٣-١٢٨).

٢٨- <u>المواشي:</u> نوصي بانشاء احتياطي اعلاف تديره هيئة واحدة وتقاضى اثمان تتيح استعادة التكلفة (الفقرة ٣-١٣٨). ادى تخصيص وتقنين علف المواشي الى تفاقم النقص في الاعلاف، ولذلك نوصي بالاستعاضة عن هذا النظام بسياسة تتيح الفرصة الكاملة للحصول على الاعلاف وتقاضي اثمان تتيح استعادة التكلفة كاملة (الفقرة ٣-١٣٩). كما نوصي بتشجيع الصادرات من اغنام العواسى مع اشتراك القطاع الخاص بصورة كاملة في هذه العملية (الفقرة ٣-١٤٠).

٢٩- <u>الميكنة:</u> نوصي بان تكون اولويات الميكنة متسقة مع اولويات البحوث. ويجب ان تحدد التكاليف والمنافع الاقتصادية المتوقعة (بما فى ذلك اثر الميكنة على العمالة) اولويات وتسلسل بحوث وتشجيع الميكنة (الفقرة ٣-١٤٥). كما نوصي بترك خدمات تاجير الآلات الزراعية للقطاعين التعاوني والخاص (الفقرة ٣-١٤٦).

٣٠- الاراضي: عالج الاصلاح الزراعي بطريقة فعالة مشكلات تركز ملكية الاراضي، عن طريق اعادة توزيعها بصورة اكثر انصافا. غير ان تجزئة الاراضي بدات تصبح قيدا على الانتاج والدخل معا، حيث لا يمكن للفلاحين الذين يزرعون قطعة ارض مساحتها هكتار واحد او اقل كسب رزقهم. ولذلك نوصي بوضع سياسة لتجميع الاراضي. ونظرا للاستثمارات الكبيرة التي وضعت في المزارع التعاونية والحكومية، والنجاح المتباين الذي حققته، نوصي بان يطلب من هذه المزارع الاعتماد على الذات (الفقرة ٣-١٥٢). كما نوصي بتقييم مشروعات استصلاح الاراضي عن طريق ازالة الصخور ومقارنتها بمشروعات استصلاح الاراضي عن طريق الري والصرف، وذلك لوضع سياسة متسقة لاستصلاح الاراضي (الفقرة ٣-١٥٤).

Executive Summary

Performance

1. During the 1975/84 decade the Syrian economy (GDP--constant prices) grew at the rapid rate of 4.8% annually. The agricultural sector, comprising 480,000 private farmers, experienced similar growth, with the value of agricultural production increasing at the rate of 5.1% annually. Agricultural growth was influenced most by the rapid increase in the value of livestock production which was 8.4% annually compared to 3.9% for crop production. However, growth was more vigorous in the first half of the decade; in the latter half, growth first moderated and then declined in 1984.

2. Within the livestock group, poultry, eggs and sheep, grew at exceptionally rapid annual rates of 27%, 12% and 10%, respectively. Of the crops, sustained growth was more evident in the production of irrigated industrial crops, such as cotton and sugarbeets, and in both irrigated and rainfed tree crops, particularly apples and citrus, but also olives, grapes and tree nuts. Similarly, yields also improved (except for apples), with cotton yields among the world's highest.

3. Agricultural production increases permitted Syria to achieve some of the self-sufficiency objectives. Self-sufficiency was gained in fruits and vegetables and livestock (meat), and maintained in poultry products. However, relatively static cereals production, coupled with the rapid population growth rate, caused a decline in the cereals self-sufficiency ratio and a stable overall agricultural self-sufficiency. Opportunity cost criteria were appropriately incorporated into sugar self-sufficiency policies, resulting in reduced and consolidated sugarbeet production in 1985.

4. The resource base expanded marginally over the decade, as irrigated areas increased by 100,000 hectares. Irrigated land currently comprises less than 20% of the total cropped area but produces about 50% of the value of crop production. Cropping intensity on the irrigated lands increased about 10% to 1.2, leaving substantial room for further improvement as the potential cropping intensity is 1.8 to 1.9 on most of the irrigated area in the Euphrates basin. Other physical input usage, e.g., fertilizers and tractors, increased at annual rates of 10%. Credit issued by the Cooperative Agriculture Bank grew by 18% annually (nominal terms), with long-term lending (for orchards and land development) increasing the most rapidly.

5. The various exchange rates applicable to agricultural exports and imports have fluctuated, making it difficult to measure changes in their real value. In current value terms agricultural exports increased at an annual rate of 4.7%, compared with overall export growth rate of 10.5%. However, as agricultural imports grew at a rate of 12%, the agricultural trade balance continued to decline, although the self-sufficiency ratio remained constant. During this period Syria experienced radically fluctuating terms of trade, improving by 25% between 1975 and 1979, and declining by 30% between 1980 and 1984.

6. Cotton, the major agricultural export, performed quite well. Physical exports of cotton lint increased by 50% and textiles more than doubled. The value of exports of cotton/cotton products (lint, yarn, textiles, and clothing) increased at an annual rate of 8.4%, exceeding LS 1.7 billion in 1984. However, expanding population, altered consumption patterns, and drought resulted in rapid increases in cereal imports, more than fivefold between 1975 and 1984. The annual growth rate of the value of cereal imports exceeded 20% over the decade. About two-thirds of the cereal imports are wheat/wheat flour.

Constraints and Potential

7. To regain the growth path Syria enjoyed during the late 1970s and to better achieve the objective of improved foreign exchange earnings/savings, it would be necessary to alleviate some of the constraints to growth. The physical resources of land and water are serious production constraints; much of the land area is stony, saline and/or arid and much of the water resources remains underdeveloped. Only 15% of the land area receives 350 mm or more rainfall, the minimum necessary for rainfed cultivated agriculture (barley excepted) without supplemental irrigation. Further, over 50% of this higher rainfall area is too stony or otherwise unsuited for cultivation.

8. About 4.0 million ha are cultivated annually (excluding fallow), of which 0.6 million ha are irrigated. The cultivated land base can be increased by expanding the irrigated area and by land reclamation through stone removal. Sufficient water resources exist to irrigate an additional 900,000 ha, and the reclaimable area through stone removal is estimated to be 680,000 ha. Thus, the land base can be significantly expanded but the financial constraint imposed by large budget deficits emphasizes the need to develop the resources efficiently and improve productivity.

9. Agricultural development could be enhanced by improvements in the policy and institutional framework. The government's self-sufficiency objective is addressed through internally consistent price, production and credit policies. However, these policies are at variance with the other objectives, viz., improved productivity and increased foreign exchange earnings/savings. Producer price policy for strategic commodities is based on production cost estimates, but domestic and international supply-demand forces are not taken into account. Production policy (crop licensing) is designed to achieve certain physical output targets to meet self-sufficiency needs, neglecting output value. Credit and input distribution policies are intimately linked with production policy as credit and inputs are available only to producers with an approved production plan. This combination of policies tends to misallocate resources in the sense that high value inputs are often allocated to the production of low value output.

10. The overvalued exchange rate and prevailing domestic and international commodity prices have placed Syria at a financial disadvantage in the production and trade of most crops. Although the production of cotton is technically efficient, the exchange rate and price structure result in financial losses and export subsidies. This, coupled with subsidized consumer prices, has created a serious drain on the public treasury and siphons financial resources away from potential investment in agricultural infrastructure. An exchange rate adjustment and more efficient pricing would alleviate this financial drain.

11. Domestic marketing and external trade are dominated by public sector institutions, many of which are monopsonies/monopolies. Marketing policy focuses on replacing the private sector with public sector institutions because of assumed "middleman exploitation." Consequently, private sector investment is discouraged, and government resources comprise the bulk of agricultural marketing infrastructure investments. Government, however, has been unable to mobilize sufficient resources for adequate marketing/processing infrastructure investment, particularly for the cotton industry. Additional resources could be mobilized by permitting broader nonpublic sector (cooperatives and individuals) participation. Parastatal performance is varied; some institutions appear to function efficiently (cotton), while others (fruits and vegetables) appear to be less efficient than private sector institutions. Performance could perhaps be improved by more competition and by permitting parastatal managers greater operational flexibility (e.g., discretionary pricing).

12. Irrigation policy and investments have concentrated on large-scale, long-gestation projects, predominantly in the Euphrates basin. With preference given to large structures, relatively less attention has been directed to other infrastructural investments. The potential benefits from these capital intensive investments are substantial, but supplemental investments in farm-level irrigation, research, and farmer education are necessary to generate them.

13. Other improvements in institutional structures which would enhance agricultural development include extension/research and credit/input supply. The government is undertaking to upgrade extension/research through a Bank assisted national extension project, and livestock and irrigation research have recently expanded. Improved benefits could be generated from an expanded research program but, given the limited manpower and financial resources, research priorities must be identified. Credit and input supply are consistent with current production policy, but if the policy were liberalized, the credit bank would be too understaffed to evaluate increased credit requests.

Strategy

14. The objectives of self-sufficiency and expanded foreign exchange earnings/savings have focused attention on physical quantities and on those commodities which account most for the negative trade balance (sugar and cereals). These objectives are appropriate, but reinterpreting them and reformulating policy support would permit them to be achieved more efficiently. If self-sufficiency is given an economic interpretation and exports and imports are accorded equal attention, these objectives become complementary. The strategy should include appropriate exchange rate and pricing policies which would permit domestic prices to reflect relative border prices. Production and trade policies, based on such a pricing system would be consistent and support the above objectives. Further, it would obviate the need for most crop licensing and the resource misallocation it entails. Farmers' production decisions based on price incentives would be fully consistent with the productivity objective and efficient resource use.

15. Available information on the agricultural sector is insufficient to identify specific solutions to some subsector constraints. A study of the irrigation subsector is proposed to establish priorities by reviewing water development projects, assessing investment costs and benefits, and evaluating farm-level water use/control. Similarly, a review of stone removal projects is proposed to identify the relative merits of alternative land development processes.

16. Limited agricultural research and applied technology appear to constrain the improvement of land and labor productivity. Research has recently expanded in several areas, such as livestock, mechanization and farm-level irrigation. It is proposed that the research system be reviewed, organizationally and technically, to identify major constraints and to assist in developing a process for establishing future priorities.

Recommendations

17. Limited budgetary resources emphasizes the need to make efficient use of government resources. Therefore, effort should be directed toward: (i) creating a conducive environment for mobilizing private and cooperative sector resources; (ii) improving resource use efficiency; and (iii) directing government resources into activities which would earn relatively high returns, but where other sectors are unlikely to invest. These criteria form the basis of the following recommendations which are designed to stimulate sustainable agricultural growth. The recommendations implicitly consider government's concern for overall control and direction of resource allocation, for income/consumption equity issues, and for orderly sectoral adjustment. The recommendations necessarily involve policy areas outside the domain of agriculture, and include market structures and agricultural institutions. While some of the recommendations imply significant changes in policy (pricing and marketing policies), others are feasible within existing structures (research and irrigation policies). To ensure an orderly transition, policy reform would need to follow a phased implementation schedule.

18. Exchange rate policy is an overriding issue, constraining growth in agriculture and other productive sectors. The current structure of exchange rates applied to finance imports and to export earnings distorts resource allocation, implicitly subsidizing imports and taxing exports while concurrently requiring explicit export subsidies to cover financial losses. It is recommended that the multiplicity of exchange rates be consolidated into a single rate, at a level which more appropriately reflects the real value of the Syrian pound (para 3.33).

19. Trade Policy. Public sector institutions enjoy several external trade monopolies. While it may be necessary to retain some monopolies, it is recommended that policy be liberalized to permit greater private participation (para 3.35) to ensure efficiency in external trading. As an export incentive the system of foreign exchange retention accounts should be retained until foreign exchange for the import requirements of exporters can be assured through the banking system (para 3.34). A positive export promotion strategy is recommended, with government institutional support to identify and expand external markets (para 3.35). Information services and quality control would be principal components of an export strategy.

20. Pricing. It is recommended that pricing be liberalized by eliminating price and marketing margin controls, thereby permitting prices to be market determined. Pricing decontrol could be gradual to maintain an orderly adjustment. During a transitional period and where price controls are deemed necessary for social reasons, it is recommended that a pricing methodology based on allocative efficiency (using border prices) be employed (para 3.73). This would form the basis for establishing prices. If government selected an alternative price level as an incentive or subsidy, the border price basis would provide the government with a benchmark for determining the economic cost of using the alternative price.

21. Marketing. It is recommended that the domestic market structure be liberalized to permit greater private participation. Marketing policy should focus on efficiency and greater private sector participation is proposed to induce efficiency through competition (para 3.73). For example, private and/or cooperative ginning and marketing of cotton would stimulate competitive efficiency, and exports could still be controlled by GOCGM or other external marketing agency. Given public sector monopolization of large segments of the market structures, the Government should adopt an explicit policy on which market segments would be left to the private sector. Without such an explicit policy, the private sector may be unprepared to invest in market infrastructure. It is recommended that the Government investments be focussed largely on activities which would make marketing more efficient, including information, quality control and grading standards.

22. Subsidies. To reduce the fiscal drain, attention should be given to phasing out consumer subsidies to the extent possible. If for social or equity reasons it is deemed appropriate to subsidize lower income groups, it is recommended that the subsidy be implemented using selective vehicles such as ration coupons, which would limit the subsidy to specific target groups (para 3.73).

23. Research. It is recommended that an Agricultural Research Council be created to provide formulation and direction for overall research policy and that a research coordinator be appointed to coordinate the work of the research directorates and report to the Deputy Minister (para 3.79). It is also recommended that research priorities be based more on economic criteria, including the benefits to be derived from achieving the research objective. Water-use efficiency would also be incorporated into the research program. Uniform fertilizer rates, regardless of the soil and climatic conditions, misallocate resources (para 3.81); research must determine location specific fertilizer recommendations for the various crops.

24. Credit. It is recommended that agricultural interest rates be reviewed as one component of the overall interest rate structure with the objective of introducing positive real interest rates and eliminating credit subsidies. In any event, zero interest rates on long-term loans should be discontinued. Interest on loans for tree planting could be capitalized during the years of establishment. It is recommended that flexible credit packages be permitted within the technical bounds provided by research (para 3.93).

25. Irrigation. To plan effectively, identify water availability and ensure efficient water use, an agreement on the international sharing of the Euphrates and Tigris rivers is needed. If agricultural growth is to be accelerated, irrigation infrastructure must be expanded and improved. Consistent with government proposals, it is recommended that irrigation investments concentrate on projects in progress rather than on commencing new projects. It is recommended that budgets, financial allocations and staffing be consistent to enable the timely completion of the outstanding projects (para 3.113).

26. Other irrigation recommendations include: (i) creating a National Water Resources Agency to coordinate overall water policy; (ii) updating the Water Master Plan, including a land/water balance which would include the potential for groundwater development; (iii) providing farm level irrigation works and offering technical advice to farmers on efficient use of water; (iv) establishing an O&M program at all levels; and (v) charging a cost recovery price for water.

27. Crop Production. The licensing system is an instrument designed to help achieve self-sufficiency and ensure that proper crop rotation is practiced. It is recommended that the licensing system be liberalized, although for crops such as tobacco with severe marketing constraints, some form of licensing could be retained. It is also recommended that water resource planning, water-use efficiency and, particularly, comparative advantage be more explicitly incorporated into crop production planning and promotion (paras 3.127-3.128).

28. Livestock. It is recommended that a feed reserve be created and administered by a single agency charging cost recovery prices (para 3.138). Livestock feed allocation and rationing has tended to exacerbate feed shortages; therefore, it is recommended that this system be replaced by a policy of full access and full cost recovery prices (para 3.139). It is also recommended that Awassi sheep exports be promoted with full private sector participation (para 3.140).

29. Mechanization. It is recommended that priorities for mechanization be consistent with those for research. Expected economic costs and benefits (including employment impacts) should determine the priorities and sequence of mechanization research and promotion (para 3.145). It is also recommended that mechanical hire services be left to the cooperative and private sectors (para 3.146).

30. Land. Agrarian reform effectively addressed the land concentration problems by redistributing land more equitably. However, land fragmentation is becoming both a production and an income constraint, as it is not possible for farmers operating one hectare or less to earn a livelihood. Therefore, it is recommended that a policy of land consolidation be formulated. Given the significant investments in cooperative and state farms and their mixed success, it is recommended that they be required to be self-sustaining (para 3.152). It is also recommended that land development through stone removal be evaluated and compared with land reclamation through irrigation/drainage to provide a consistent land development policy (para 3.154).

SYRIA

AGRICULTURAL SECTOR SURVEY

I. INTRODUCTION

A. Background

Role of Agriculture in the Economy

1.01 The agricultural sector contributes about 20% of the value added in the economy, employs about 30% of the labor force and contributes about two-thirds of nonoil exports. 1/ Also, it provides raw materials to the manufacturing sector, particularly the food, tobacco, textile and leather subsectors which contribute about one-third of the gross output and employ about one-half of the labor in the manufacturing sector. Output is relatively volatile as agricultural production is primarily rainfed based, and rainfall fluctuates widely from year to year. The real value of production during the late 1970s fluctuated 15% to 20% annually and by 1980 was 50% higher than in 1975; between 1980 and 1983 it remained almost constant and then declined by 9% in 1984 due to adverse weather. The production of industrial crops, cotton, sugarbeets and tobacco has been less affected by erratic rainfall as they are mainly produced under irrigation. About 50% of the value of crop production is derived from irrigated areas. The drought years necessitated substantial imports, particularly of food grains and animal feedstuffs; in 1984 their respective imports were LS 1,180 million and LS 355 million, which was about 50% of all agricultural imports. Cotton is the major agricultural export and the second largest net earner of foreign exchange. In 1984 cotton lint exports exceeded LS 1.1 billion. Agriculture's potential contribution to the economy is greater than its current contribution, although some efficiencies including water utilization will be required to achieve that potential.

Land Resources and Use

1.02 Syria has a land area of 185,000 km^2 of which about 65% receives less than 200 mm of rainfall annually (Map IBRD No. 19556). The steppe and pastures comprise about 45% of the land area (8.3 million ha). Other nonarable land (rocks and sands, marshes, etc.) total 3.5 million ha and forests cover 0.5 million ha. This leaves a balance of 6.2 million ha of arable land of which 4.0 million ha are cropped annually and 2.2 million ha are uncultivated; about 1.8 million ha of the uncultivated lands are annually rotated fallow. About 0.6 million ha of the cropped area is irrigated.

1/ Agricultural exports are defined as the sum of export values in Standard International Trade Classification numbers 0, 12, 21, 22 and 26.

1.03 The country is divided into five agricultural zones which reflect rainfall patterns (zone I is further divided into two sub-zones). The following list indicates the land area in each of the zones:

Zone	Rainfall (mm)	Land Area ('000 ha)
IA	more than 600	
IB	350-600	2,701
II	250-350 and not less than 300 for 2/3 of years	2,450
III	more than 250 and not less than 250 for 1/2 of years	1,330
IV	200-250 and not less than 200 for 1/2 of years	1,850
V	less than 200	10,187
	Total	18,518

The proportion of arable land within the zones is undetermined. Crops suitable for the various zones are: Zone I--wheat, legumes, tobacco, sesame, unirrigated vegetables; Zone II--wheat, barley, legumes, sesame, melons; Zone III--barley, legumes; Zone IV--barley, pastures; and Zone V--uncropped unless irrigated. Actual cropped areas for 1984 by zone, irrigated and rainfed are indicated in table 1.1. The most important irrigated crops are cotton, wheat, sugarbeets, citrus and other fruits and vegetables. The most important rainfed crops include wheat, barley, tobacco, legumes and tree crops (mainly olives and grapes). There is extensive sheep grazing on the steppe and pasture lands, supplemented by crop residues and feedgrains. Mechanical (tractors, pumps and other farm equipment) and chemical (fertilizers and pesticides) input usage has expanded rapidly; fertilizer use tripled between 1975 and 1984. About 85% of the irrigated wheat is planted to high yielding varieties (HYV). However, yields remain below demonstrated potential.

TABLE 1.1 CROPPED AREA BY AGRICULTURAL ZONE

	Zone					
	I	II	III	IV	V	Total
			('000 ha)			
Irrigated	220	158	42	41	157	618
Rainfed	1,070	963	405	440	239	3,117
Total	1,290	1,121	447	481	396	3,735

1.04 There are about 440,000 farm families engaged in crop production and another 40,000 engaged only in livestock production. Approximately 80% of the farmers operate farms smaller than 10 ha. Average farm sizes range from about 3.0 ha in high rainfall and irrigated areas to about 45 ha in the low rainfall areas. A 1983 law established a maximum ownership size of 16 ha for lands under government irrigation and reclamation projects. Other maximum ownership sizes were as follows:

Irrigated (non-Government)	15 ha	Ghoutam oasis (south of Damascus)
	20 ha	coastal region
	25 ha	Bteiha area
	35 ha	in pump-irrigated areas
	40 ha	in areas irrigated from Euphrates, Khabour and Tigris Rivers
	45 ha	in areas irrigated from wells in Al-Hassaka, Deir-es-Zor and Arrakka provinces
Tree Crops	30 ha	Latakia & Tartous Provinces
	35 ha	other provinces
Rainfed Areas	55 ha	if annual rainfall > 500 mm
	85 ha	350 mm < annual rainfall < 500 mm
	140 ha	annual rainfall < 350 mm

To encourage landowners to improve their land, rainfed areas converted to tree crops or irrigated land would remain subject to the maximum area ownership rules applicable to rainfed areas. In addition to relatively small farm sizes, land holdings are also characterized by fragmentation, i.e., multiple plots. On average, each holding consists of four plots; even holdings of less than one hectare contain an average of three plots. The small plot sizes deter mechanization and impair efficient irrigation.

Water Resources

1.05 Water resource development is based on a 20-year old master plan which is currently being updated. A gross area of 1,262,000 ha has been identified as irrigable from surface water, although updating may alter the potential area. Only 323,000 ha are currently surface water irrigated, about 25% of the potential area. The largest potential for irrigation expansion is in the Euphrates, Khabour and Orontes basins. Some 295,000 ha are irrigated from wells, but groundwater potential has not been fully investigated nor has groundwater development been controlled. Data suggest that less than 50% of the land irrigated from this source was from licensed wells. Better control is urgent as the aquifers are being depleted--older wells are drying up.

1.06 Water-use efficiency is relatively poor in both irrigated and rainfed areas. Excess water use is characteristic of irrigated areas where the full distribution networks have not been developed. This has marginal negative effects on yield, but, more importantly, it will be difficult to change farmers' irrigation habits when more land is developed and water becomes relatively scarce. Further, it increases production costs as much of the irrigation water is pumped and, in some areas, is also drained with pumps. Water is not economically priced, and farmers do not have an economic incentive to use it efficiently. Ministry of Agriculture and Agrarian Reform (MAAR) and MOI coordination is needed to address land leveling, efficient water use, cropping patterns and water requirements. Very low cropping intensities of 1.1 to 1.2 are achieved in areas where systems were designed for cropping intensities of 1.8 to 1.9. Similarly, water conservation practices are insufficiently used in rainfed areas.

1.07 Improved cultural practices in rainfed areas, based on moisture conservation and more efficient use of fallow land, would partially alleviate production volatility. Given that water is the most scarce production resource on a national basis, water use efficiency should have a major role in

defining production policy and crop options. Other production resources should be directed to optimizing water efficiency.

1.08 Although an ambitious irrigation development program was initiated in 1975, the net irrigated areas had expanded by only 135,000 ha through 1985. Some surface irrigation schemes involved large-scale water impoundment (particularly Lake Assad) which inundated irrigated areas. Nevertheless, irrigation in these locations expanded, compensating for the inundated areas and increasing the net irrigated area. The role of the private sector was equally important in expanding the irrigated areas through well drilling and groundwater exploitation.

Extension

1.09 Extension services are provided by several institutions, but, except for the Directorate of Extension (DOE), these efforts comprise a minor portion of their activities. General Organization of Tobacco (GOT), General Organization of sugar (GOS) and the Cotton Bureau provide specialized information on tobacco, sugarbeets and cotton, respectively. In addition, General Organization for Seed Multiplication (GOSM) provides information to contracting seed producers. The Directorates of Animal Production, Plant Protection, and Agricultural Affairs also provide some specialized extension information.

1.10 DOE is under reorganization, primarily to add supervision and subject matter specialist support for the village-level extension units, to improve the quality of agricultural advice to farmers. Administrative support is being strengthened at the national and provincial level, which in the past have neither provided reliable supervision nor systematic technical support to extension unit staff. The needed supervision and support level is being strengthened with IFAD assistance.

1.11 In parallel with the reorganization is a program to train field staff in extension methods, acquaint them with the practical aspects of farming and develop a work program which will more effectively transmit information to the farming community. Audio visual aids will be added to the list of tools for disseminating information. Mass media programs, radio, television and pamphlets/booklets will be developed for general information and specific topics such as seeding, fertilizer placement, water conservation, etc.

Research

1.12 There are four national research directorates in Syria entrusted with various aspects of agricultural research. These are: (i) Directorate of Agricultural Scientific Research (DASR); (ii) Directorate of Soils and Lands (DSL); (iii) Directorate of Irrigation Research (DIR); and (iv) Directorate of Animal Research (DAR). The latter two directorates were established in October 1985 and have not yet developed comprehensive research programs. Some specialized research in cotton, sugarbeets, citrus, olives and tobacco is undertaken by agencies responsible for those crops. Two international research organizations, the Arab Center for Studies of Arid Zones and Dry Lands (ACSAD) and the International Center for Agricultural Research--Dry Areas (ICARDA), are also located in Syria.

1.13 DASR conducts adaptive research on crop breeding (high-yielding varieties of wheat, barley and chickpeas have been developed), agricultural practices and pest control. Also, in collaboration with ICARDA they carry out

verification trials in farmers' fields. DSL is responsible for land classification and soil laboratories, and conducts research on soil fertility and plant nutrition, crop rotations, plant environment and soil conservation. DIR will be involved in water management research at the field level, and DAR will be involved in various aspects of livestock management and nutrition research.

1.14 ACSAD, which has three substations in the arid/semiarid areas, has recently initiated research focused on water management for fruit trees and field crops. ICARDA conducts research on integrated farming systems and improvement of cereals, seed legumes and forages. Both of these international centers cooperate with the national institutions, particularly in verification trials and training programs.

1.15 Research recommendations are used by Government in designing its agricultural plans and crop licenses and agricultural credit packages (para 3.94). More location specific recommendations would facilitate more efficient resource use, given the variety of soil types and agro-ecological environments that prevail. Research work has addressed, and recommendations have been developed, for a wide variety of cultural practices including: seedbed preparation; time and method of seedings; more efficient fertilizer use; improved crop rotation methods; and pest control measures. Mechanization, water use and management, weed control, tree crop productivity, and livestock and range management have received less attention. The creation of the two new directorates will help in addressing some of these issues if properly supported with technical staff. However, research prioritization and coordination between the various directorates and other agencies conducting research is necessary to attain efficient research.

Research-Extension Linkage

1.16 Contacts between research and extension staff occur at all levels, but only on an ad hoc basis. Research findings are currently transmitted to the extension service through technical publications, annual reports and training efforts but are not readily translated into recommendations suitable for farmers' use. More formalized contacts would improve information flow. Extension staff participation in research verification trials and research staff participation in field demonstrations would better link research with farm-level problems. The Government is attempting to improve this linkage with IFAD assistance under the National Agricultural Extension Project.

Cooperatives

1.17 There are over 4,000 agricultural cooperatives in Syria, primarily multipurpose service cooperatives which provide a credit/inputs conduit and output marketing services. There are also several specific purpose livestock cooperatives which focus on range improvement, sheep fattening, sheep breeding and dairy cow breeding. Only nine crop production cooperatives exist which produce an insignificant proportion of total output. However, private production marketed through cooperatives ranges from 30% for cereals to 50% for fruits and vegetables. Other cooperatives include those formed to supply members with irrigation water. Cooperative membership totaled 400,000 in 1984, approximately 90% of the number of farmers in Syria.

1.18 Members of cooperatives receive priority for credit and inputs from the Cooperative Agricultural Bank (CAB). The cooperatives service both CAB and farmers by consolidating credit and input requests, and guaranteeing the

loans; as this forms an important part of CAB's cost of lending, an interest rate concession of 1.5 percentage points is awarded the cooperatives for these services. The cooperatives pass a portion of the interest rate concession to farmer members charging them 5.0% for seasonal loans, contrasted with 5.5% for individual farmer credit. Approximately 50% of CAB's total credit was through cooperatives in 1984. The monopoly marketing agencies also pay the cooperatives nominal amounts for serving as assembling agents of farm produce.

B. Development Objectives

1.19 Syria has a series of economic and social objectives to improve basic welfare, upon which the development plans are based. Social objectives include, among others, reducing illiteracy, achieving self-sufficiency in basic foodstuffs, encouraging private investment in agricultural production, provision of adequate housing and more equitable income distribution. The economic objectives include high growth rates of productivity and production, increased income and savings rates, and reduced budget and trade deficits. Objectives under the Fourth and Fifth 5-Year Plans were similar, but the Fifth 5-Year Plan gave greater emphasis to economic considerations. The general objectives set forth for the agricultural sector included achieving self-sufficiency in basic foodstuffs, particularly cereals, improving the agricultural trade balance, and increasing rural incomes. The principal strategies employed to achieve the defined objectives are: (i) the agricultural investment program; (ii) the production planning, licensing and credit allocation; and (iii) the pricing and marketing systems.

Fourth 5-Year Plan (1976-80)

1.20 The primary objectives of the Fourth 5-Year Plan relating to the agricultural sector were ambitious and consisted of the following:

(i) to achieve a real annual average growth rate in agricultural Gross Domestic Product (GDP) of 12% (7.9% per capita);
(ii) to establish an agro-industrial economy to provide a basis for self-development;
(iii) to achieve self-sufficiency in major food and clothing commodities and to increase the degree of self-sufficiency in other commodities;
(iv) to improve nutritional levels of the population;
(v) to reduce the socioeconomic disparities between the rural and urban sectors;
(vi) to increase forested areas in all provinces, particularly in those regions requiring a forest barrier between the steppe and agricultural areas; and to increase the area and productivity of fruit tree orchards; and
(vii) to construct dams and irrigation networks . . . to increase irrigated areas . . . .

Several other objectives for the transportation, industrial and other sectors impact upon agriculture directly as the sectors are highly interdependent.

Fifth 5-Year Plan (1981-85)

1.21 Despite falling short of many of the targets in the Fourth 5-Year Plan, the objectives and targets proposed for the agricultural sector were also ambitious in the Fifth 5-Year Plan. Objectives for the sector were:

(i) to achieve an increase of 45.8% in the agricultural GDP during the plan period, i.e., an annual increase of 7.8%;
(ii) to meet food security needs and to achieve self-sufficiency in agricultural commodities which can be efficiently produced;
(iii) to provide adequate agricultural raw materials to meet domestic industry requirements;
(iv) to contribute to reducing the balance of trade deficit by producing exportable agricultural commodities with a 1985 export target of LS 2,590 million; and
(v) to increase labor productivity (GDP per agricultural worker) to a target level of LS 18,120 in 1985 (LS 14,019 in 1980).

1.22 There were a number of other goals of the Fifth 5-Year Plan which included, among others: (a) accelerate land classification to ensure proper land use, prevent degradation, and facilitate location specific crop and fertilizer recommendations; (b) initiate land consolidation; (c) orient research toward specific production problems and create an agricultural research council; (d) reappraise all land reclamation projects; and (e) fully identify water resources and develop a scheme for their exploitation. Specific 5-year production and development targets are contained in Annex Table I.13.

C. Strategies

1.23 The Government has followed three broad strategies in pursuit of the development objectives. These include infrastructure investment, particularly in irrigation and land reclamation; detailed planning of physical production targets; and controlled pricing and market systems.

1.24 Investments over the Fourth and Fifth 5-Year Plans, were made in three broad areas which would impact upon crop production, livestock production and agricultural services. Investments which were perceived to impact upon crop production were primarily concerned with irrigation and land reclamation which was budgeted to receive 78% of the entire agricultural development budget. Other crop production investments included fruit tree seedling nurseries and seed farms. Direct livestock production investments were for the General Organizations for Poultry and for Cattle.

1.25 The final area of planned investment, agricultural services, was to receive 13% of the agricultural development budget and included development projects covering veterinary services, extension service, research stations, integrated agricultural projects and livestock improvement; it also included investments in agricultural mechanization and land services.

1.26 The agricultural investments were complemented by investment in the manufacturing sector. Fifty percent of the manufacturing investment was for processing agricultural raw materials. Modest investments were also planned for the trade sector institutions which market agricultural commodities.

1.27 Target planning was designed to achieve self-sufficiency and export surplus objectives within defined limits. This planning process started with the desired end result and worked backward through the production process to determine the resources required to produce the desired output. The planning process, target identification and crop licensing (paras 2.14-2.15 and 3.114) complement a compulsory strategy covering the production and much of the

marketing of agricultural commodities. Although production incentives through attractive farm commodity prices was a policy objective, the planned profit margins were basically irrelevant as the production plan targets specified crop production composition.

II. PLANNING AND PERFORMANCE

A. Agricultural Public Investment Program

2.01 The Fourth 5-Year Plan (1976-1980) allocated LS 10.4 billion (US$2.8 billion equivalent) or about 23% of the total planned public investment to the agricultural sector; the cooperative and private sectors were expected to invest LS 2.5 billion (US$0.6 billion). Of the total investment planned for the public agricultural sector, LS 7.4 billion was assigned to the development of the Euphrates basin, and the completion of the Euphrates Dam, LS 1.1 billion to medium and small irrigation and land reclamation projects; and LS 1.9 billion to the development of projects in support of crop (about 35%) and livestock (about 65%) subsectors. Almost all the investment planned for the Euphrates basin was earmarked for completing projects carried over from previous plans. In contrast, only 40% of the planned investments for medium and small irrigation schemes were to complete ongoing projects with 60% assigned for new projects. Planned investments in support of the crops and livestock subsectors were 65% for ongoing projects and 35% for new projects. A major portion of the investments in support of the crop subsector were channeled to the development of the Ghab region and to the completion of storage facilities for grain and potatoes; small scattered investments were planned to develop agricultural services (e.g., research, extension and plant protection) to complement the large planned investments in irrigation. In the livestock subsector, public investments for production activities were equally divided between poultry (eggs and meat) and cattle. These investments were complemented with modest development investments for veterinary services, desert water wells and forage processing facilities.

2.02 Fourth 5-Year Plan spending in the agricultural sector fell far short of original anticipations; actual investments were about 40%, in nominal terms, of the total amount planned for the sector. The shortfall in the Euphrates basin investments was more acute than in the rest of the sector where actual investments were about 33% of the plan. In the rest of the agricultural sector, actual investments reached 57% of planned investment. This poor investment performance in agriculture contrasted with investment levels in other sectors equivalent to 90% of the original plan allocation. Technical difficulties, coupled with scarce qualified managerial and technical staff, caused the drastic shortfall in the implementation of the Euphrates basin projects and delayed the realization of irrigation benefits. Therefore, public investment during the Fourth 5-Year Plan contributed only minimally to the growth of the crop subsector. However, investments in veterinary services (vaccine and vaccination programs), poultry (day-old chicks) and cattle improvement contributed to the growth of the livestock subsector.

2.03 During the Fifth 5-Year Plan, LS 15.5 billion (US$3.9 billion) or about 19% of the public investment budget was proposed for the agricultural sector. Of the total public sector investment program, LS 10.9 billion or about 70% was specifically allocated for defined projects; the balance was to be allocated to new projects selected from an indicative investment list. The

most important projects in the indicative list were the Khabour basin project in the irrigation subsector; the Southern Regional project in the crops subsector; and additional cattle and poultry production farms in the livestock subsector. The Fifth 5-Year Plan included sizable allocations for the development of agricultural extension, pest control, fruit tree development and the establishment of agricultural machinery service stations. Allocation for specific projects/programs in the livestock subsector--in contrast with the Fourth Plan where major emphasis was given to production (cattle and poultry) activities--emphasized the development of livestock services (e.g., veterinary, range monitoring and management). Cattle investments (production and improvement) were still important in the Fifth Plan; however, investments to further expand poultry production were de-emphasized.

2.04 As in the Fourth Plan, expenditures during the Fifth Plan fell far short of those originally anticipated; actual spending in the agricultural sector reached only about 56% of the allocated amount. This poor performance contrasted with the 70% expenditures in the industrial sector and over 90% in the service sector. The following table indicates anticipated investments, budget allocations and actual investments during the Fifth 5-Year Plan. Allocations and expenditures are summarized in Annex Table I.1.

Table 2.1: PROPOSED INVESTMENTS, BUDGET ALLOCATIONS AND UTILIZATIONS, 1981-85

	5-Year Plan Proposal	Budget Allocations	Actual Expenditures
		(LS Billion)	
Irrigation:			
Euphrates basin	6.1	NA	3.4
Non-Euphrates	1.9	2.9	1.1
Agriculture:			
Central directorates	1.9	2.7	1.6
General organizations	0.6	1.3	0.8

2.05 The programs with the largest budgetary underexpenditure were the fruit tree program, the Southern Regional project, and projects in the fisheries subsector. Major causes for the shortfall in the fruit tree program and the Southern Regional project--which aim at rehabilitating highly productive rainfed areas and promoting intensive fruit tree planting programs were: (i) procurement delays for equipment financed by bilateral and multilateral loans, and (ii) the lack of managerial and technical personnel to implement the programs.

2.06 The Sixth 5-Year Plan (1986-90) is still under preparation, and figures on the investment program are not yet available. It is not expected to be finalized before mid-1986, but preliminary preparatory work for the sixth plan included the preparation of a detailed plan and budget for 1986. During the sixth plan, the agricultural sector will continue to enjoy the highest government priority, with investments in irrigation continuing to receive the largest investment allocation. However, the irrigation investments will be complemented with investments in agricultural services, and in support services to the livestock subsector. In the irrigation

subsector, rehabilitation project investments take priority over projects to irrigate new areas; also, rehabilitation of highly productive rainfed areas (mainly through the fruit tree planting program and the Southern Regional project), and improvement/expansion of the agricultural extension service will continue to be emphasized. Support services for the livestock subsector will receive greater emphasis than in the Fifth Plan, with less emphasis on production projects, particularly poultry production.

2.07 The 1986 public investment budget allocated LS 4.5 billion to the agricultural sector. This amount compares with the actual expenditure of LS 1.8 billion during 1984 and a budgeted figure of LS 3.8 billion for 1985. Over 95% of the 1986 budget is allocated for ongoing projects with the balance for new projects. Of the total 1986 agricultural budget, LS 1.7 billion is allocated to the development of the Euphrates basin, LS 1.5 billion to the development of medium and small irrigation schemes outside the Euphrates, and LS 1.8 billion is allocated for other agricultural projects. The preliminary budget allocation for 1986 is shown in Annex Table I.2.

B. The Planning Process

2.08 Five-year plans provide the guidelines for government decision making. These plans, which are annually evaluated and revised within the general goals of the plans, set out the economic and social objectives for the economy as a whole, and for each individual sector, and the general policy measures to achieve said objectives. Also, the plans set out the indicative investment program, and the quantitative production and input targets.

2.09 Preparation of the annual plan is a two-way exercise; top-down, general indicators and production targets, and bottom-up, a detailed production plan including cropping patterns and input needs from the sub-district level. The Supreme Agricultural Council, which is chaired by the Prime Minister, establishes broad objectives, provides production targets and investment indicators, and later makes the final decision on the production plan and a number of commodity prices. The fundamental objectives which have been established are as follows: (i) highest priority is self-sufficiency in major food crops at the national level; however, each province should also be relatively self-sufficient, particularly in perishable commodities such as fruits and vegetables; (ii) provide raw material for agro-industries within the provinces; (iii) expand the export of agricultural and agriculturally derived products; and (iv) select crops agronomically and economically suited to the areas. The Ministry of Finance determines the aggregate budget and sector guidelines in both the five-year plans and the annual plans.

2.10 These guidelines are transmitted through the State Planning Commission (SPC) to MAAR and other sectoral ministries. SPC also performs an intersectoral coordinating role regarding investment requirements and physical infrastructure.

2.11 Two Directorates within MAAR, Planning and Statistics, and Agricultural Economics, have the major responsibility for defining the plan which will be implemented by other directorates. They begin by reviewing the past year's achievements within the framework of climatic and infrastructure constraints and relate that to the proposed plan. Plan targets are assessed relative to the land and water resources available within the rainfall zones. (Irrigation water availability depends substantially on the previous year's

rainfall.) Within the irrigated areas, if adequate water is available, multiple cropping will be considered; otherwise, water allocation will be roughly designed 50% each for summer and winter crops. Technical planning guidelines for rainfall areas include the allocation of 50% of the planted areas to cereals and 50% to legumes and summer crops. This guideline applies to Zones 1 through 4; however, the planted versus fallow land ratios will differ by zone as follows:

Rainfall Zone	Proportion of Area	
	Planted	Fallow
1	100	0
2	75	25
3	50	50
4	33	67

Further planning guidelines indicate that cereal production in Zone 3 should be mostly barley, although some local wheat production is acceptable. Barley is the only cereal production permitted in Zone 4. Crop rotations are based on technical research (i.e., cereals follow a legume), and yield targets are based on research and farm experience. The technical inputs needed and their availability are also assessed—availability of HYV wheat and other seed, fertilizer, pesticides, etc. The indicative aggregate production targets are then translated into provincial targets.

2.12 These indicative targets are forwarded to the provinces with a request to provide information on the land base, potential crop and animal production, and input requirements. This information provides the base for the preparation of the detailed sub-district, district and provincial plans, and the revised (if any) targets which go to the Supreme Agricultural Council. The provinces request this information and the preparation of production plans from district and sub-district committees. The committees are chaired by MAAR staff; other members represent the farmers (General Union of Peasants), the Ba'ath Party, the cooperatives, state farms within the district, Cooperative Agricultural Bank and agroprocessing facilities within the region. Producers are not consulted regarding their crop production preference but to determine their perception on meeting certain production targets and to identify input requirements. Data compiled by district and sub-district committees are consolidated into provincial summaries and submitted to MAAR headquarters. Provincial committee representatives are invited to Damascus to discuss production targets and requirements with the Directorate of Planning and Statistics and the technical directorates. In these discussions the targets are accepted or modified and returned to the province for final clearance and approval by the Provincial Agricultural Council (chaired by the Governor). After approval it is returned to the Directorate of Planning and Statistics, consolidated into national targets and sent to the Supreme Agricultural Council for final approval.

2.13 It requires about three months to consolidate the draft national plan after receiving the indicators and guidelines. The winter cropping plan is expected to be approved by the Supreme Agricultural Council in September. Submission and approval of the summer cropping plan will be deferred until after the winter rains have started; any revisions/adjustments will be made in December. Production flexibility is permitted on rainfed areas if the rainfall pattern is distorted.

Crop Licensing

2.14 Licensing is an integral part of crop production policy and planning; it is the instrument used to link plan targets, credit and input requirements, and farm production. In principle, the province may exempt small farms not exceeding 1.0 ha of irrigated land or 2.5 ha of rainfed land from crop rotation. However, in practice all farmers obtain licenses so as to have access to credit and inputs and to facilitate marketing. The licensing process is designed to direct resources to the production of specific crops (particularly wheat, cotton and sugarbeets) which will assist in achieving national objectives. The license is a pervasive instrument required for all major food and industrial crops, annual crops as well as perennial tree crops. The license stipulates the basic cropping pattern, which is compulsory, and recommends a generalized production technology. The license forms the basis for obtaining inputs on credit from the CAB, which is the sole legal supplier of seasonal inputs. However, the license is also a control mechanism intended to ensure that technically sound crop rotations are practiced, and long-term benefits are realized by maintaining soil productivity.

2.15 Prices and economic returns are not major criteria in farmers' production decisions. Production discretion is basically limited to deciding which vegetable to produce in the area allocated to vegetables and to technology, including diverting, in some instances, inputs (mainly fertilizer) from one crop to another. As the farmers are more aware of their particular resource constraints, particularly labor, if left to their own preferences, they would tend to adjust their production pattern to use those resources more efficiently and profitably. Relaxing the licensing requirements, permitting farmers to take more active production decisions, coupled with economic farm prices would result in the production of commodities more remunerative to farmers and more beneficial to the economy. The extension service must ensure that farmers are educated on the merits of improved technology including crop rotation to maintain long term productivity and benefits.

C. Recent Agricultural Performance

2.16 Between 1975-79, the total value of agricultural production (constant terms) increased; however, population grew at an annual rate of 3.4%, thus production remained constant on a per capita basis. In 1980 production grew considerably from the previous year. That higher level was maintained through the early 1980s, except for 1984 when poor rainfall caused a decline.

2.17 Agricultural self-sufficiency is a stated objective, but, overall, self-sufficiency in value terms has not improved during the past decade, remaining constant at about 0.91. (The self-sufficiency measure used was production/consumption, where consumption = production + imports - exports.) If consumer subsidies were eliminated and a more appropriate exchange rate prevailed the self-sufficiency ratios would be higher as higher prices would reduce consumption. Aggregate cereal self-sufficiency generally declined (except for near self-sufficiency in 1982—an aberration caused by barley exports from stock carryover), reaching a low of 0.56 in 1984. [Self-sufficiency in food grains (rice and wheat) was even lower; the food grain self-sufficiency ratio in physical quantities was 0.41 in 1984.] However, self-sufficiency for fruits and vegetables, eggs and livestock/meat improved during the decade; achieving values of 1.00 or greater.

2.18 Land resource use improved slightly for irrigated crop land, where cropping intensity increased from 1.15 in 1975/77 to 1.25 in 1982/85. However, cropping intensity for rainfed agriculture has remained relatively static at about 0.65. These intensities exclude perennial tree crops which have expanded rapidly on both irrigated and nonirrigated land.

2.19 Although unimportant in production per se, the expansion in cooperative membership means that an increasing proportion of production resources is used by cooperative members. The relative intensity of input use between cooperative and private sectors is unknown, but there is no difference in land productivity as yields of major crops are the same between the two sectors. Crop production sold through cooperatives occupied 25% and 40% of the cultivable and irrigated land, respectively, in 1975; this increased marginally to 30% and 45% by 1984. Marketing through cooperatives has increased for all major crop groups; cereals, legumes, fruits, vegetables and industrial crops. Cooperatives currently market over 40% of the wheat, barley, cotton, and olives; over 50% of the lentils, sugarbeets, apples and potatoes; over 60% of the tomatoes and onions; and over 70% of the peanuts.

2.20 The annual planning exercise incorporates area and yield targets for several important crops. Yields are highly influenced by rainfall, particularly for the nonirrigated crops. Therefore, comparisons between actual areas planted and areas targeted are more appropriate performance indicators than yield and production comparisons. Thus in addition to the discussion of general trends in agricultural production, targets and achievements are compared/contrasted for the years 1981-84.

2.21 Cereals. The principal food cereal, wheat, and the primary feedgrain, barley, occupy about 70% of total cropped area (and together with the pulses occupy over 90% of the winter planted areas). The relative importance (in terms of planted area) of the two cereals was reversed during the decade, with wheat area declining at the annual rate of 4%, and barley area increasing at an annual rate of 4.4%. Yield and production of both cereals fluctuated considerably, responding to annual rainfall patterns.

2.22 Concurrent with the declining wheat area, planting of local varieties has shifted in favor of high yielding varieties (HYV). At the beginning of the decade, about 15% of the wheat area was planted to HYV; this increased to over 50% by the end of the decade. Although only 15% to 18% of the wheat is irrigated, the proportion of irrigated wheat planted to HYV has remained relatively constant at 90% over the decade.

2.23 Wheat targets are set for local and high yielding varieties, rainfed and irrigated. In total, achievements have deviated only slightly from the targets. However, the individual wheat targets have been grossly over and underachieved. HYVs planted in rainfed areas have exceeded the targets by 50% to 100%, whereas local varieties planted in rainfed areas have typically reached about 75% of the target. Since 1981, the area planted to barley has consistently been above plan targets by 20% to 40%. However, since barley is a rainfed crop, yields have been volatile and, generally, below plan targets.

2.24 Legumes. A wide variety of food legumes are produced with lentils and chickpeas predominating. The area and production of lentils during 1980-84 have averaged about 65% of the 1975-79 level, and, although the production of chickpeas has almost doubled, the per capita availability of pulses has declined over the decade. The areas planted to lentils and chickpeas, have consistently been below those planned, averaging about

two-thirds of the target areas. The production of fodder legumes, comprising vetches and sern, declined at an annual rate of 3.0% during the decade.

2.25 Industrial Crops. Cotton production declined during the 1975-80 period, but increased 11% annually in the following four years due to both area and yield increases. Production in 1984 was 450,000 tons, second only to the record production in 1983. Areas planted to cotton were slightly above targets, and, except for 1984, actual yields were close to the annual targets. Over 95% of the cotton is irrigated, and irrigated yields have increased continuously until they peaked at 3,000 kg/ha in 1983. The annual rate of yield increase was 3.5% for the decade.

2.26 Sugarbeet production increased consistently over the decade, primarily because area expanded at the rate of 18% annually. The sugarbeet yield, although low by international norms, was above plan targets; it increased at the annual rate of 6%; the greatest productivity increase of all Syrian crops. Sugarbeets are fully irrigated, and, although their production started from a low base in 1975, increased by more than 500%, an annual average increase of over 25%. Despite this phenomenal growth, the areas planted were only 90% of those targeted. Due to a 1985 policy change, the area planted to sugarbeets has been consolidated and reduced. Production of tobacco, which is primarily grown on rainfed lands, has remained relatively static. Areas under cultivation have decreased, but yields have slightly improved, thus offsetting production losses.

2.27 Tree Crops. The area and production of all major tree crops increased rapidly over the decade and achieved the optimistic targets. Olives and grapes, the overwhelmingly important tree crops, are rainfed and occupy 70% of the tree crop areas. About 80% of olive production is used for oil and ranks second to cottonseed as a source of locally produced vegetable oil. Olive tree plantings have increased at an annual rate of 4% during the decade, and production has also increased at a 4.7% annual rate. Grapes are produced for a variety of uses, but fresh consumption accounts for about 60% of production. Vine plantings increased only marginally during the decade, but yield increased by 3.3% annually, resulting in production growing by 3.8% annually.

2.28 Apple tree plantings, which are grown under both rainfed and irrigated conditions, have been consistent with the annual plans. As the number of bearing trees increased rapidly so has apple production, at a rate of 11% annually. This occurred even though the proportion of trees under irrigation declined from about 65% to 55% . Citrus trees, which are 100% irrigated, experienced the greatest production growth rate at 15% annually. Total plantings increased by 11.3%. Also, yield increased by 3.8%, primarily because of more bearing trees reaching maturity.

2.29 Vegetables. Watermelons occupy the largest area of the vegetable crops, although areas fluctuate greatly. As watermelons are produced under rainfed conditions, yield and production are more volatile than areas planted. The area planted to the major summer vegetables, tomatoes, potatoes and onions (dry), which are primarily produced under irrigation, has also been close to the planting targets. Potatoes and tomatoes experienced annual production increases of 12.3% and 8.5% respectively, caused by increases in both area planted and yield. Onion production increased by 2.7%, primarily because of transfers from rainfed to irrigated areas and higher yields.

2.30 Livestock. The livestock sector was relatively dynamic during the decade. Animal production increased except for draft animals (oxen and donkeys). Chickens, sheep, and dairy cows increased at annual rates of 13%, 10% and 4% respectively; however, during the 1982-84 period poultry numbers stabilized at 15 million. Animal productivity also increased; poultry products, meat and eggs, increased at annual rates of 26% and 12%, and milk (including milk products) increased at 8% annually.

III. POLICIES AND PERFORMANCE

A. Exchange Rate Policy

3.01 Syria has a multiplicity of exchange rates, explicit and implicit, sanctioned and unsanctioned. Four explicit exchange rates are sanctioned and are known as the official, the parallel, the tourist-buying and the tourist-selling rates. These rates are broadly applicable to public sector transactions, private sector trade, foreign tourist transactions/workers' remittances and tourist transactions by Syrian nationals, respectively. Although unsanctioned, a fifth, but unofficial, exchange rate exists and is used relatively openly. Implicit rates have been created by applying the official and parallel exchange rates to various proportions of export earnings.

3.02 This spectrum of exchange rates is a product of the 1980s. The official rate of LS 3.90/3.95 = US$1.00 has remained constant since 1976. The parallel rate was established in 1981 to encourage private exporters and, after some initial instability, has been maintained at LS 5.40/5.45 = US$1.00. In 1982, a tourist rate was sanctioned as the unofficial rate had diverged sharply from the recognized rates, and workers' remittances were being diverted to this market. The tourist rate was set near the unofficial rate at LS 5.80 = US$1.00; it immediately appreciated but, subsequently, steadily declined to LS 8.25 = US$1.00. Prime Minister's Decision 1857 of June 24, 1985 consolidated the official and parallel rates with the tourist rate becoming applicable to most private sector transactions. In 1985, a tourist selling rate of LS 11.25 = US$1.00 was introduced for Syrian nationals purchasing foreign exchange for external travel expenditures. The unofficial rate was about LS 13.00-13.50 = US$1.00 in December 1985.

3.03 As the widely applicable official and parallel rates have remained constant in US dollar terms since 1981, a significant de facto currency appreciation occurred between 1981 and 1985. During this period, the US dollar appreciated against all the major trading currencies, ranging from 25% to 50% for the Japanese yen and pound sterling, respectively. As a consequence of the stable Syrian pound to US dollar exchange rate, the pound appreciated against other major currencies, consistent with the US dollar appreciation. The foreign trade and commodity price relationships were distorted by this currency appreciation, particularly because trade with the US has comprised only 5% of Syria's external trade. The distortion is mitigated by the fact that trade with countries whose currencies are also tied to the US dollar comprises a larger proportion of total external trade. The effective exchange rate is heavily influenced by petroleum, which is the major import and export, and is traded at the official exchange rate. Exchange rates applicable to agriculture have been similar to the economy-wide rates; these are illustrated in Table 3.1.

B. Trade Policy

3.04 A number of external trade objectives were identified in the fifth five-year plan, including inter alia: (i) reduce the trade deficit by limiting import growth and expanding export growth; (ii) enhance the public sector's role in external trade; (iii) increase the relative importance of capital goods imports and the relative importance of manufactured/semimanufactured exports; (iv) establish import priorities based on a foreign exchange plan; (v) protect domestic production; (vi) develop a system for promoting exports, including subsidies; (vii) conclude long-term trade agreements; and (viii) establish a foreign exchange pricing system consistent with encouraging exports and remittances by Syrian expatriates. The following policy measures impact on some of these objectives.

Public Sector Control

3.05 Public sector institutions carry out the bulk of external trade, for both exports and imports. The proportion of total exports handled by the public sector has remained relatively static at 90% over the past decade (1975-84); the proportion of imports handled by the public sector has increased from 70% to 90% during the same period. These aggregate trading statistics are heavily influenced by petroleum imports/exports which are exclusively controlled by the public sector. Public sector institutions have monopoly import and/or export rights for the major agricultural commodities and inputs. Nevertheless, the proportion of trade handled by the private sector in the categories defined as (i) agricultural, (ii) textiles (includes cotton lint), and (iii) food, beverage and tobacco manufactures was 27%, 30% and 34% for exports and 30%, 52% and 16% for imports, respectively, for 1980-84. A list of public sector institutions and their external trade domain is contained in Annex Table I.30. The commodities handled by public sector institutions represent the bulk of the external trade in agricultural commodities. Private sector trade consists primarily of imports/exports of other fruits and vegetables, livestock (sheep, lambs and goats) and imports of other vegetable oils (primarily corn oil). As an incentive to the private sector, exporters are permitted to exchange fresh fruit and vegetable export earnings at the tourist rate of LS 8.25 = US$1.00, otherwise the parallel rate applies. In June 1984, the private sector was given temporary permission to import livestock feeds due to the drought and the inability of the General Organization for Fodder to provide adequate feedstuffs, but were responsible for finding their own source of foreign exchange.

Exchange Rates

3.06 In 1981, when parallel exchange rates were introduced, several exportable commodities, including some agricultural products, were declared eligible for partial exchange of foreign currency proceeds at the parallel exchange rate. Over time more exportable commodities were included in this eligibility list, and increasing proportions of the foreign currency proceeds became eligible for exchange at the parallel rate. In 1985, the plethora of effective exchange rates were eliminated, and all agricultural commodity exports (except cotton lint which is traded at the official rate) were transacted at the tourist rate. Exchange rates applicable to agriculture are indicated in the table below:

Table 3.1: EXCHANGE RATES APPLICABLE TO AGRICULTURAL TRADE (DECEMBER 1985)

	Official Rate	Tourist Rate
EXPORTS		
Public Sector		
- Cotton Tobacco	100	
- Other		100
Private Sector		100
IMPORTS		
Public Sector		
- Wheat, sugar, etc.	100	
- Fruit, vegetables, livestock		100

Source: Ministry of Finance and State Planning Commission.

Export Subsidies

3.07 Export subsidization is an integral component of trade policy. Subsidies apply to cotton lint and textiles and have increased from an annual average of LS 5.0 million in 1975-78 to LS 17.8 million in 1979-83. This is an anomalous situation as Syrian cotton production is technically very efficient. Cotton yields, among the world's highest, are produced under a minimum chemical-use regime, and lint is of superior quality. Cotton lint represents the bulk of agricultural commodity exports and is the largest net earner of foreign exchange. The General Organization for Cotton Ginning and Marketing, however, must exchange cotton lint export earnings at the rate of LS 3.90 = US$1.00 and incurs a financial loss. Textile export earnings can be exchanged at the parallel rate, LS 5.40 = US$1.00, but the General Organization for Textiles also incurs a financial loss.

Foreign Exchange Accounts

3.08 A decree (PM No. 1791) in 1983 permitted industrial establishment exporters to open foreign exchange retention accounts. Fifty percent of their export earnings could be used to finance import operations if certain criteria were met. The import items must comprise: (i) agricultural or industrial equipment or spares; (ii) raw materials; or (iii) production requisites. In February 1984, the Ministry of Economy and Foreign Trade permitted individuals to open foreign currency accounts for the deposit of externally acquired funds (i.e., workers' remittances) up to US$300,000. Balances in these accounts could be: (a) sold to local banks at the tourist rate; (b) used to import unrestricted items; and (c) transferred abroad. The retention accounts have provided exporters an incentive as they are able to finance import production requirements without having to queue for documentary credits (L/Cs).

Tariff Structure and Tax Policy

3.09 Licenses issued by the Ministry of Economy and Foreign Trade are required for all imports. However, licenses for public sector trading institutions, the General Organizations, are automatically issued within the context of the annual plan (General Organizations under the Ministry of Economy and Foreign Trade issue their own licenses). Private sector importers can obtain a license by depositing 50% of the value of the proposed import with the Commercial Bank of Syria. Licenses are required for livestock exports but, otherwise, are not required for the export of agricultural commodities handled by the private sector. However, a repatriation commitment to surrender the foreign exchange proceeds to the Commercial Bank of Syria within six months of the date of export is required.

3.10 Tariffs play only a modest role in agricultural trade policy. The major agricultural commodity imports are subject to relatively minor duties as indicated below:

Commodity	Duty
Wheat	1%
Wheat flour	0.25/kg
Barley	exempt
Corn	1%
Rice	0.14/kg
Sugar	0.16/kg
Vegetable oil	0.18/kg
Sesame	0.045/kg
Olives	0.06/kg
Cotton	0.035/kg
Fruits & vegetables:	
(a) from a member country of the Joint Arab Marketing Union	0%
(b) from Lebanon	0.10/kg
(c) from other countries	47%
Agricultural machinery	7%-15%

The prices of these commodities produced domestically are higher than the equivalent international prices and the low level of duties provide no significant protection. However, since public sector institutions have exclusive import rights and monopolize domestic marketing for most of these commodities, domestic producers are not influenced by imports and international prices.

3.11 Except for cotton lint, exports are not subject to an export tax, but some exports of agricultural origin are subject to an agricultural production excise tax. This ranges from 7% to 12% and is applicable to cotton lint, textiles and yarn, dehydrated onions, peanuts and preserved/canned foods. In addition, a 1% excise tax is applied to cotton used by the spinning and weaving mills. Cotton represents an anomaly in the trade sector as cotton lint exports are subsidized as well as taxed. Cotton lint exports are subject to a 12.5% tax on the export value and a 9% production tax is also applicable. The production tax is levied on the farm value of the seed cotton equivalent of the lint export. The following table indicates that tax revenue generated

through lint exports doubled over the 1980-84 period. The only other explicit tax applicable to the agricultural sector is an asset tax of LS 2.25 levied per head of sheep. There are no agricultural land or income taxes.

Table 3.2: TAX REVENUE FROM COTTON LINT EXPORTS

	Production Tax	Export Tax	Total Tax
	(LS Million)		
1980	70	70	140
1981	74	46	120
1982	100	51	151
1983	110	75	185
1984	188	112	300

Source: Ministry of Finance.

Trade Agreements

3.12 Syria maintains active bilateral trade agreements involving agricultural commodities with Cuba, the USSR and the Islamic Republic of Iran. A payments clearing house arrangement exists with the latter two countries in which the outstanding trade balance is settled periodically. The agreement with Cuba involves the annual purchase of given quantities of sugar with the price to be determined at time of purchase. The USSR agreement includes the annual export of 15,000 tons of cotton lint, also at a price to be determined. The agreement with the Islamic Republic of Iran is important for the credit arrangements as there are no stipulated quantities of agricultural commodity exchange. However, the agricultural commodities involved include Syrian exports of barley, phosphate fertilizers and textiles. Syria has no agriculturally related barter trade agreements.

Incentives/Disincentives

3.13 The only significant incentives are the exchange rate applicable to private sector agricultural exports and the export retention scheme. Private sector agricultural exporters are permitted to exchange export earnings at the tourist rate, and a promotional rate (near the unofficial rate) is under consideration. The other export incentive, foreign exchange retention accounts, permits 50% of export earnings to be retained for financing import operations (para 3.08).

3.14 There are no export credit facilities nor is technical or information support available. The Center for Foreign Trade, within the Ministry of Supply and External Trade, was established to identify/develop external markets. However, it has focused more on identifying subsidy requirements for export institutions than identifying markets.

3.15 The exchange rates applicable to the public sector organizations that engage in agricultural trade create an anti-export bias and an incentive to import as domestic prices are higher than the local currency equivalent of

the international prices. The major agricultural exporter is the General Organization for Cotton Ginning and Marketing, but domestic prices of cotton lint are higher than international prices at the official exchange rate. Similarly, the General Organizations responsible for fruits and vegetables, cereals and sugar incur losses on domestically procured commodities which are partially offset by profits made on imported commodities. However, the multiple exchange rate system is used as an incentive to domestically process agricultural raw materials and export semimanufactured/manufactured items. For example, cotton yarn and textile export earnings are convertible at the parallel exchange rate.

3.16 The set of exchange rates applicable to the various commodities which are imported/exported, creates a set of implicit subsidies/taxes. The following list indicates the subsidy/tax at the official exchange rates, assuming LS 8.25 = US$1.00 is the appropriate rate.

Exchange Rate (LS/US$)	Implicit Subsidy/Tax (%)
3.90-3.95	110
5.40-5.45	50
8.25	nil

Foreign Exchange Shortage

3.17 By October 1984, the shortage of foreign exchange became so acute that the backlog of applications by private sector importers implied a waiting period of about two years. This severely constrained the private sector's ability to import because by the time L/Cs were opened the price quotations had expired. Consequently, Government permitted private importers to import if they deposited 110% (subsequently reduced to 50%) of the local currency equivalent with the Commercial Bank of Syria, and if the foreign supplier provided the items on 360 days credit. In practice the private importer obtains the foreign currency requirements in the unofficial market (LS 13.50 = US$1.00), or uses assets held abroad, and pays the supplier; the Commercial Bank approves the import and issues an import license with which customs clearance is effected. Thus, in a practical sense, the exchange rate applicable to private sector importers is not the intended parallel rate but the unofficial rate.

Terms of Trade

3.18 Syria's terms of trade, like those of other primary product exporters, have deteriorated over the past decade. The terms of trade actually increased between 1975 and 1979 but after 1980 declined precipitously. The prospects for improvement in the near future are poor as there are abundant worldwide supplies of Syria's three major exports. High petroleum production will likely continue to depress world prices for crude oil which is Syria's overwhelming important trade item. Similarly, excess capacity exists in worldwide phosphate production which will maintain downward pressure on phosphate prices. Currently, world cotton stocks are at their highest level, primarily due to substantially increased production in the southern hemisphere and in China; the latter has been transformed from a net importer to a net exporter. Thus, cotton prices will continue to be weak in the near term. Syria benefits from the production of a superior quality cotton whose price is affected less than standard grades.

3.19 Counterbalancing the expected lower prices for exports are lower prices for some of the major imports. Petroleum/Petroleum products is a major import; thus, to the extent that export prices are lower, so will be import prices. Wheat prices are expected to decline due to continued high production levels and smaller imports by the USSR, China and India and lower support prices in the US; thus, to the extent that Syria must import wheat, it should be relatively low cost. However, about two-thirds of Syria's imports are manufactured items whose prices will likely increase.

3.20 Given that government establishes the price level for a large number of producer and consumer items, the domestic terms of trade are essentially determined by government. In the absence of data on prices received and prices paid by farmers, the wholesale price index of agricultural raw materials and the retail price index were used in deriving a domestic terms of trade index. Although not a stated objective, the terms of trade remained relatively constant over the 1975-84 decade (Annex Table I.10). The index began and ended the decade at 108 (1980 = 100).

Trade Performance

3.21 External trade in agricultural commodities is very much a function of domestic production and consumption; production fluctuations, caused by climatic or other factors, are magnified in external trade. (Annex Tables I.5 to I.7 contain export, import and trade balance statistics for agricultural and related commodities for the 1975-84 decade.) Cotton produced on irrigated land exhibits a more stable production and trade pattern than most rainfed crops. Although cotton and cotton product exports have fluctuated, they have generally expanded and continue to comprise the major agricultural export groups. The objective of expanding the proportion of semimanufactured and manufactured items has been achieved in cotton products. Cotton lint exports have fluctuated but have exhibited a stable trend over the 1975-84 decade, although lint exports were at a record high level in 1984. Exports of yarns/fabrics and manufactured clothing have increased quite rapidly, and their trade balances have improved significantly. Between 1975/79 and 1980/84 the net imports of yarns/fabrics declined by more than 50% from LS 296 million to LS 138 million, and the net exports of manufactured clothing increased by about 150% from LS 67 million to LS 171 million.

3.22 The second most important agricultural export group is fruits and vegetables which experienced a modest increase of 20% between 1975/79 and 1980/84. Pulses, lentils and chickpeas, comprise about 50% of the value of fruits and vegetables exports. Syria is also a major fruits and vegetables importer, but these have declined over the decade. Fresh citrus imports increased about 50% between 1975/79 and 1980/84 (despite a large increase in citrus plantings) and now comprise about 35% of the fruits and vegetables imports. Although fruit and vegetable imports remain substantial, the overall trade deficit diminished rapidly over the 1980-84 period and self-sufficiency was achieved in 1984.

3.23 Live animals, sheep and goats, are an erratic export, increasing during drought years when the national herd must be reduced due to inadequate feed supplies. Exports decline to near zero in subsequent years when the national herd is being rebuilt. The only animal product exported in significant amount is wool, which averaged about LS 32 million over the 1975-84 decade.

3.24 Barley exports are also erratic occurring only about once in two years, and imports become necessary about once in three years. The potential for barley exports is good (para 3.31) as regional demand is high, but barley is produced in areas of marginal rainfall with consequent volatile production. Tobacco is the only other significant agricultural export. However, various types of tobacco are imported for blending, creating a negative trade balance in tobacco.

3.25 Cereals comprise the most important group of agricultural imports. Wheat and wheat flour are the major components, although rice and feedgrains (maize and barley) are also important. Since 1981, drought induced production declines and increased demand have resulted in an increasing trend in wheat/wheat flour imports which totaled over LS 1.0 billion in 1984. Rice is a relatively minor component of the diet but is a significant import item as it is not produced in Syria, averaging about LS 150 million annually over the 1980-84 period. Feedgrain imports are erratic but quite large in years of drought when domestic forage production is reduced.

3.26 Other animal feed imports, primarily protein concentrates (oilseed meals), have increased at the rate of 25% annually. These feeds are partially imported to meet unexpected shortages caused by drought but have primarily grown to meet the feed needs of the rapidly expanding poultry and dairy industries and the supplemental feed requirements of the national sheep flock.

3.27 Average annual sugar imports increased from LS 275 million to LS 455 million between 1975/79 and 1980/84, although domestic sugarbeet production increased by over 500% during the decade. The demand for sugar is abnormally high due to consumption subsidies (paras 3.72-3.73), necessitating increased imports. Dairy product imports have also increased and averaged about LS 300 million during the 1980-84 period. Imports of beverage crops (tea, coffee and cocoa) have increased by 20% annually. Tea was added to the list of subsidized consumer goods in 1985; thus, tea imports are likely to increase even more rapidly. Animal and vegetable oil imports increased between 1975 and 1981 but have since declined to about LS 100 million. Several other agricultural commodities are imported but are relatively unimportant.

3.28 The decline in the overall agricultural trade balance is basically demand, not supply, created. Production and exports of agricultural and agriculturally derived products have increased but imports and consumption have increased at a more rapid rate due to: (i) rapid population growth, and (ii) the overvalued pound and the subsidized consumption of some imported items have artificially inflated demand.

Trade Improvement

3.29 To improve the balance of trade, Syria has limited options. Options include inter alia: (i) reducing the volume of imports; (ii) expanding the volume of traditional exports; and (iii) developing/expanding non-traditional exports. Within the sphere of agricultural imports/exports all three of these options appear feasible.

3.30 Reducing import volume. Syria imports a wide array of cereals and animal feedstuffs, fruits and vegetables, oilseeds and vegetable oils, and animals and animal products many of which could be efficiently produced domestically if supported by an appropriate set of policies, including a realistic exchange rate and parity prices. The agroclimatic environment and

available technology are adequate to support efficient production of many of these items, particularly fruits and vegetables, in sufficient volume to provide domestic requirements and contribute to exports (para 3.32). Although fruit and vegetable seasonality may dictate off-season imports.

3.31 Expanding traditional exports. Cotton and cotton products comprise the major agricultural export, but live animals (sheep, lambs and goats), pulses, fruits and vegetables, and, periodically, barley have also contributed to export earnings. The current surplus stock of standard cotton grades has depressed prices, including prices of superior qualities such as Syria produces. However, increased Syrian exports of the superior grades should not affect prices. The regional market for Syria's sheep and lambs could absorb a larger (but undefined) volume. The breed of sheep raised in Syria yields a high quality, premium-priced meat highly sought in the region. Exports have fluctuated, but price pressure has not been evident at the higher volumes, indicating that exports could be stabilized at the higher volume without adversely affecting price. Also, the demand for feedgrains in the region is increasing, and barley surpluses have a ready market. The international trade in pulses is relatively small and characterized by volatile prices. Nevertheless, even at the exchange rate currently prevailing, exports are profitable. As Syrian exports are a minor portion of world trade, additional exports would not seriously impact upon price and, at a more suitable exchange rate, exports would remain profitable at lower prices. The fruit and vegetable markets are generally highly competitive but Syria fills a time niche for some, such as watermelon. Other vegetables such as onions have limited supply competition in the region and some export expansion may be possible for these items.

3.32 Developing Nontraditional exports. Given Syria's agroclimatic environment, the agronomic production potential is quite diverse. Numerous fruits and vegetables can be produced but identifying markets is difficult. The oil exporting countries in the Gulf import most of their fruit and vegetable requirements but many countries are attempting to supply these markets. Nevertheless, in addition to expanding exports of the traditional export commodities, non-traditional exports could be developed for such items as citrus fruits (fresh and canned juices), apples, grapes and tree nuts (almonds and pistachios). Syria is currently a net importer of these items but occasionally exports fresh citrus; these and possibly other fruits and vegetables could be exported to Gulf countries. However, Syria would need to focus on high-quality produce and concentrate on niches with minimal competition. About two-thirds of Saudi Arabia's citrus imports originate outside the Eastern Mediterranean countries. With high-quality produce, Syria should be able to compete effectively with Western Mediterranean (Spain and Morocco) countries for this market. Similarly, Chile and the US typically supply more than 50% of Saudi Arabia's grape imports. Syria could not displace Chilean supplies as they are off-season, but should be able to effectively compete with the US by producing/exporting a high-quality product. It is possible to develop some nontraditional agricultural products for export, but specialized marketing expertise would be needed to design a strategy and develop the tactics to capture a defined segment of the identified market and exploit the export potential.

Recommendations

3.33 Import substitution, export profitability, subsidies and taxes are intimately related to the foreign exchange rate. A more appropriately priced currency is necessary to improve the trade balance and the budgetary impact of

trade subsidies. It is understood that Government is considering simplifying the exchange rate system. The Bank supports this initiative.

3.34 Foreign exchange accounts currently provide the major export incentive. With appropriately priced foreign exchange, such accounts may be unnecessary. However, until adequate foreign exchange is available for procuring raw materials, spare parts, etc., these accounts remain appropriate

3.35 To enable Syria to process agricultural raw materials and export more semi-manufactured and manufactured products, it is recommended that the Center for Foreign Trade, or similar institution, actively engage in searching for new markets and negotiating trade preferences and agreements. It is recommended that private sector institutions be permitted to participate with the public sector institutions in importing/exporting. Control could be exercised, if necessary, by requiring import/export licenses for the applicable commodities.

C. Pricing and Marketing Policy

3.36 Government intervention in agricultural prices and markets is pervasive, affecting virtually all crop commodities and some livestock products. The objectives of price policy are to: (i) provide unified farm-level and consumer prices for major domestically produced and imported products but flexible, locally determined seasonal prices for perishable items (fresh fruits and vegetables); (ii) provide an equitable distribution of income for farmers; (iii) ensure price stability by (a) pricing domestic production and imported products on an incurred cost basis, and (b) determining consumer prices on social and economic criteria; and (iv) provide production incentives to promote self-sufficiency and export expansion in certain strategic commodities. The fundamental policy applicable to commodity transfers within the marketing channel is cost recovery. Prices received by marketing institutions should cover their operating costs and include a margin. Marketing objectives complement the price objectives and include: (i) maintain stable prices by providing (a) infrastructure (storage, etc.) and (b) adequate volumes of essential commodities; (ii) expand public sector wholesale and retail marketing to protect producers and consumers from exploitation; and (iii) support cooperative output marketing.

3.37 Given the pricing policies, some institutions marketing production inputs (fertilizer and seeds) and consumption items (bread, rice, sugar, vegetable oil and tea) incur financial losses, thus requiring subsidies to maintain financial viability. If a subsidy is deemed necessary, it is injected into the marketing system as near as possible to the final consumer. That is, a single subsidy would be injected near the end of the marketing chain. To influence marketing and control prices, a complex set of public sector marketing institutions have been established under the auspices of four different ministries. Prices paid and received by those institutions are defined precisely with a handling margin normally allowed over operational and raw material costs. Marketing institutions for certain strategic commodities are awarded monopoly rights for both domestic and external marketing; however, only those institutions which process industrial crops (sugarbeets, cotton and tobacco) actually achieve a monopoly. Annex Figure I.2 illustrates the public sector marketing channels, institutions and commodity flows.

3.38 The price level is determined, for many items, using a cost-plus methodology. Annual cost of production studies or estimates including labor, land and capital costs are undertaken by MAAR. Returns are estimated on the basis of the yield obtained by a better-than-average farmer and a price which would provide a profit margin of 5% to 30% (depending upon the crop) over the total cost. Thus, government can alter the commodity terms of trade to provide incentives/disincentives. Government has altered significantly the planned terms of trade and planned crop returns. Between 1980 and 1984 the planned terms of trade for irrigated HYV wheat increased 90%, remained stable for maize and barley, and declined 20% for pulses, cotton and sugarbeets. These shifts have been inconsistent with international commodity terms of trade, particularly for wheat and sugarbeets. However, the crop licensing system minimizes farmer responses to prices and terms of trade (para 2.17).

3.39 To relate prevailing (1984) producer prices to efficiency prices, border prices and nominal protection coefficients (the ratio of the domestic price to the border price) were computed. (Table 3.3).

Table 3.3: NOMINAL PROTECTION COEFFICIENT ESTIMATES FOR SELECTED COMMODITIES, 1984

Crops	At Applicable Exchange Rate /1	At Shadow Exchange Rate (LS 8.25 = US$1.00)
Cereals/Pulses		
Wheat	1.11	0.76
Barley	0.67	0.49
Maize	2.26	1.14
Chickpeas	6.77	1.13
Lentils	0.83	0.51
Industrial		
Sugarbeets	Neg	Neg.
Cotton	1.27	0.64
Sesame	1.57	0.76
Peanuts	1.06	0.50
Vegetables		
Melon	0.60	0.28
Potatoes	0.80	0.80
Tomatoes	0.32	0.32
Cucumbers	0.96	0.47
Fruits		
Olives	1.63	0.79
Grapes	0.83	0.39
Citrus	3.41	2.25
Apples	1.64	1.02

/1 The applicable exchange rates were LS 8.25 = US$1.00 for potatoes and tomatoes, LS 5.45 = US$1.00 for citrus and apples, and LS 3.95 = US$1.00 for all other commodities.

The nominal protection coefficients (NPC) are interpreted as follows: if the NPC > 1, the protection measures (controlled imports, tariffs and controlled domestic prices) provide positive production incentives to domestic producers; an NPC < 1 indicates the protective measures discriminate against domestic producers; and if NPC < 0, the production of that commodity signifies an absolute loss of foreign exchange to the economy. NPCs derived from single year prices should be interpreted cautiously, particularly fruits and vegetable prices which exhibit considerable intra- and interyear volatility. The situation which prevailed in 1984 provided positive incentives (protection) for most commodities; barley and lentils being the important exceptions. However, if an exchange rate of LS 8.25 = US$1.00 reflected the appropriate rate, the pricing measures provided positive incentives to sugarbeets, citrus, maize and chickpeas; domestic production was discriminated against for all other commodities except apples for which the impact was neutral.

3.40 The extent of government intervention in commodity pricing and marketing is a function of the commodities' strategic importance and includes four categories. Category composition is indicated in the following list:

Category I

Outputs	Inputs
Wheat	Wheat seed
Barley	Barley seed
Chickpeas	Cotton seed
Lentils	Maize Seed
Maize	Seed potatoes
Sugarbeets	Fertilizer
Cotton	Agrochemicals
Tobacco	Milled livestock feeds
Peanuts	Barley (livestock feed)

Consumption Items

Flour/bread	Sugar
Vegetable oil	Rice, Tea

Category II (Outputs)

Apples	Potatoes
Dry onions	Garlic
Tomatoes (for processing)	Citrus (contract procurement)

Category III (Outputs)

Sheep meat	Milk

Category IV (Outputs)

Green fodder--vetch, sern, etc.
Other field crops--sunflower, sesame, etc.
Other fruits and vegetables--grapes, olives, melons, cucumbers, etc.

3.41 Farm prices for commodities and inputs in Categories I and II are established by the Supreme Agricultural Council, based upon submissions by MAAR. Retail or consumer prices are set by the Ministry of Supply and Internal Trade, as are the transfer prices between institutions. The prices of commodities in Categories III and IV are also established by the Ministry of Supply and Internal Trade. However, an open parallel market exists for these items in which prices are determined by market forces, and the official price is adjusted semiweekly (less frequently for animal products) to generally conform to the parallel market prices. This also applies to a limited degree to the items in Category II that are sold for fresh consumption. The consumption items noted in Category I are also sold at a subsidized price, and all but flour/bread are rationed at the subsidized price, although additional purchases are permissible at "cost recovery" financial prices. (These items are imported using the official exchange rate.)

3.42 These policies are consistent (particularly for wheat) and generally achieve the objectives, except they do not perform as incentives. Crops are licensed to meet production targets and conform to rotational cropping patterns; hence, little deviation is possible for the major cereal and industrial crops, and price is a secondary criterion in the production decision process. Further, current season prices are occasionally announced after planting; thus, any price consideration is from the previous season.

Marketing Performance

3.43 Cereals. The General Organization for Trade and Processing of Cereals (GOTPC) is the sole legal entity authorized to procure wheat and barley from farmers and cooperatives. Wheat is stored by the General Company for Silos for subsequent delivery to the General Company for Milling. Grain movement between districts is prohibited unless accompanied by a permit issued by GOTPC. The two types of wheat, hard and soft, are differentially priced with hard wheat prices being about 10% higher. The two types of barley, black and white, are identically priced.

3.44 Actual wheat procurement is about 40% to 45% of production, suggesting a significant parallel market and/or diversion to animal feeds. As GOTPC requires 1.3 to 1.5 million tons of wheat, domestic procurement must normally be supplemented by imports (GOTPC is the monopoly importer of wheat/wheat flour). The following table contains wheat production estimates and GOTPC domestic and import procurement. While the proportion of the crop procured fluctuates, the volume of the crop remaining in the private sector is quite stable—about 925,000 to 950,000 tons in recent years.

Table 3.4: GOTPC WHEAT PROCUREMENT

	1981	1982	1983	1984	1985
	('000 tons)				
Imports					
Wheat + (flour)	46+(437)	80+(95)	738+(74)	1,034+(61)	599+(11)
Domestic procurement	988	591	653	127	790
Production	2,087	1,544	1,612	1,067	1,714
Unprocured production	1,099	953	959	940	924
Proportion procured	47%	38%	40%	12%	46%

3.45 Given the penetration of bakeries and subsidized bread into rural areas, it is improbable that these volumes of wheat would be retained solely for household consumption and for seed. An unknown quantity of wheat is parboiled and consumed as bulgar (crushed wheat), but anecdotal evidence suggests that some wheat is used as feedgrain, particularly in years of feedgrain scarcity. (In 1984, unofficial prices of LS 1,750, LS 2,500 and LS 3,000 were reported per ton of barley, wheat and maize, respectively, prior to private importation of maize.)

3.46 Barley procurement by GOTPC varies greatly both in terms of proportion of total production and quantity procured. The responsibility for barley marketing is relatively complex. As noted above, GOTPC has the sole procurement rights for domestic production; it also has monopoly export rights, but import rights are vested in the General Organization for Fodder (GOF). Public sector barley procurement is indicated below:

Table 3.5: PUBLIC SECTOR BARLEY MARKETING

	1981	1982	1983	1984
	('000 tons)			
GOF Imports	-	-	-	299
GOTPC Exports	106	556	57	-
Domestic Procurement	1,032	25	49	2
Production	1,405	661	1,043	303

It is quite clear that the public sector handles significant quantities of barley only when production levels are high. Between 1980 and 1984, GOTPC procured about 40% of the barley produced, but procurement was as low as 1% in 1984. As many barley producers are also livestock producers a considerable quantity of barley would be used on-farm. Nevertheless, the private sector markets a sizable portion of production despite the legal prohibition on moving barley out of the area of production. Until October 1985, GOF subsidized barley sales to livestock producers; however, since that date, cost recovery prices have been charged.

3.47 Pulses. Public sector marketing of the major pulses, lentils and chickpeas is also performed by GOTPC, the legal monopoly procurement agency. Lentils, like wheat and barley, cannot legally be moved from the area of production without a GOTPC issued permit. The private sector is permitted to engage in domestic trade of chickpeas but is not permitted to participate in external trade. During the early 1980s (through 1983), public sector procurement amounted to about 40% to 45% of production; however, in 1984 and 1985, GOTPC procurements were negligible indicating the private sector market is flourishing.

3.48 Maize. GOF is the public sector institution responsible for domestic procurement of maize. However, private sector maize movement is permitted and is freely traded. Nevertheless, GOF procures 55% to 60% of the small crop, primarily because the private sector has no drying facilities. GOF purchases high moisture maize, dries it, and sells it at a subsidized price (lower than the purchase price).

3.49 Industrial Crops. Public sector marketing and processing institutions handle 100% of the major industrial crops, i.e., cotton, sugarbeets and tobacco. The General Organizations for Sugar (GOS) and Tobacco (GOT) contract with farmers for given quantities of raw materials at stated prices (determined on a cost-plus basis). The contracts specify planting and harvesting dates to ensure that deliveries of raw materials are distributed over the harvest period. Additionally, GOT provides contract farmers with extension services, seed, pesticides, and production credit. The General Organization for Cotton Ginning and Marketing (GOCGM) performs the cotton marketing function for cotton producers.

3.50 Sugarbeets. GOS performs virtually all of the marketing functions from transport to processing. Sugarbeets are procured on the basis of 16% sugar content. Upon delivery, samples are taken and the sugar content determined. A price penalty (or premium) of 1% is deducted (or paid) for each percentage point the sugar content is below (or above) 16%. If the sugar content is below 10%, beets are rejected. In 1984, delivery averages were marginally above 16%. There are seven GOS plants involved in sugar processing and marketing of which three were constructed between 17 and 37 years ago, and four in 1979 or later. The older plants have had a much lower processing cost, because of: (i) a higher beet supply, permitting higher capacity utilization (in 1984, 84% compared to 54% for the newer plants); (ii) their ability to refine imported raw sugar, thereby extending their operating season; and (iii) a higher extraction rate (9.9% versus 9.2% in 1984). The sugar extraction rate is poor compared to the expected norm of 13.5% to 14%, i.e. 85% to 90% of the sugar content. The low yield is partially caused by delayed processing after harvesting as the sugar deteriorates in stored beets. In keeping with the policy of cost recovery pricing, sugar produced in the older plants was sold to the General Organization for Public Consumption (GOPC) at LS 3.10/kg, and that processed in the newer plants was sold at LS 6.50/kg. Molasses is sold to GOF at prices ranging from LS 200 to LS 250 per ton depending upon the source, an older or a newer plant.

3.51 During the past several years, one focus of production policy was expanding sugarbeet production. However, production was promoted in some inappropriate areas, with consequent low yields and high costs. At the prevailing exchange rates, sugar imports cost about 20% of the domestic production cost. To arrest this cost anomaly, the current policy focus is to eliminate production in the marginal areas and to plant only in the higher productivity areas. With reduced production, the already excess processing capacity increased, and four of the plants were closed in 1985 to increase the capacity utilization of the remaining three.

3.52 If extraction rates were increased to expected industry norms, sugar production would increase by about 40%, with only marginal production cost increases. Raw material costs comprise an above-normal 64% of the production costs. This is partially caused by the high raw material price necessary to make sugarbeet production remunerative. However, under prevailing conditions sugar production costs would be greater than the import price, even without a raw material cost. For sugarbeets to be an economic crop, very substantial increases would be necessary in either productivity, international prices or the exchange rate (para 3.123 and Table 3.14).

3.53 Cotton. Farmers and cooperatives deliver their seed cotton to one of 17 ginneries owned by the General Organization for Cotton Ginning and Marketing where it is sampled and graded. The basic price is based on 1 3/32"

fiber length and a ginning rate of 38% to 39%; premiums or penalties of 50 piasters/kg are paid for each 1/32" deviation in fiber length and/or each percentage point change in the ginning rate.

3.54 Ginning capacity is overutilized, requiring an extended ginning season. The ginning operation is technically efficient and throughput per worker has recently improved; however, economic efficiency is poor, primarily due to the exchange rate at which export earnings must be redeemed. High efficiency is indicated by the high proportion of direct production costs, 95%, that is attributed to raw material costs. Thus, the principal determinants of financial performance are the relationships between the purchase price of seed cotton and the selling price of lint/lint by-products and the exchange rate. As 50% to 60% of the lint is exported, the exchange rate is particularly important. In 1984, lint was sold to local spinners at LS 9.50/kg, but, when combined with export sales, the average price received was the equivalent of LS 7.86/kg. The net result is that the value of production is only 83% of the cost of production.

3.55 A small portion of the cotton seed is procured by the General Organization for Seed Multiplication; the balance is procured by the General Organization for Food Industries for the three oil extraction companies. The capacities of these companies are fully utilized; in 1984 and 1985 small tonnages (20,000 to 24,000 tons) of cotton seed were sent to Turkey for oil extraction on a fee basis.

3.56 Oil extraction, like ginning, is quite efficient. Raw material costs, basically cotton seed, comprises about 60% to 65% of the total production costs, and these costs in turn comprise about 87% of the value of production. The following prices applied in 1984.

	LS/ton
Cotton seed purchase price	860
Processed cotton seed oil selling price	6,500
Cotton seed cake	875
Cotton seed hulls	385
Linters	1,560

Products are sold exclusively to other public sector institutions. The oil is sold to General Organization for Food Industries, the cotton seed cake and hulls to GOF, and the linters are exported on commission by General Organization for Foreign Trade in Chemicals & Foodstuffs.

3.57 The handling and marketing of cotton appears to be quite efficient but is financially handicapped by the exchange rate. Additional processing capacity is urgently required, and, in the absence of a more appropriate exchange rate, processing investments will only be made by the public sector.

3.58 Tobacco. The GOT collects the leaf from farmers/cooperatives and transports it to the manufacturing facility. Procurement is made on a graded sample basis. GOT fully processes the tobacco, including all stages necessary for cigarette manufacture. Some tobaccos are imported for blending with the locally produced leaf.

3.59 Manufacturing capacity is fully utilized, but output does not meet domestic demand. Manufactured cigarette imports are prohibited; nevertheless, large but undefined quantities enter the country and are frequently available. Production is relatively efficient; labor and raw materials comprise 50% and 37%, respectively, of total production costs. This is an appropriate composition given the highly processed final product.

3.60 Financial results indicate a high value added by GOT, but this includes the government excise tax. A prerequisite for capturing a larger share of the domestic market is expanded capacity. However, to do so would require additional imported leaf for blending and more effective control of illicit imports.

3.61 Fruits and Vegetables. The market structure of fruits and vegetables is characterized by a large number of buyers and sellers, with significant public sector intervention for only a few commodities. The number of private sector market intermediaries is relatively large, and entry into wholesaling/retailing is relatively easy. Public sector participation commenced in 1977 with the establishment of the General Company for Fruits and Vegetables (GCFV). It operates numerous retail and refrigerated wholesale centers around the country. It also contracts with processors to supply raw material and with producers for their output.

3.62 GCFV controls most, if not all, of the volume of fruits and vegetables for processing. However, its influence in the marketing of fresh fruits and vegetables is limited to potatoes, tomatoes, onions, garlic, melons, apples and citrus. Although not all production is marketed, the proportion of production procured by GCFV is indicative of its market power. The following table indicates these proportions.

Table 3.6: PROPORTION OF PRODUCTION PROCURED BY GCFV, 1980-84

	1980	1981	1982	1983	1984
	(percent)				
Potatoes	3	4	7	13	9
Tomatoes	1	3	5	9	4
Onions	6	2	6	16	7
Garlic	18	7	9	35	NA
Melons	/1	/1	/1	/1	1
Apples	2	7	12	36	29
Citrus	2	6	13	4	3

/1 Less than 1%.
Source: Ministry of Supply and Domestic Trade.

3.63 GCFV procures 25,000 to 50,000 tons of other fruits and vegetables, but the amount of any particular commodity is an insignificant portion of the total. The public sector exercises significant market influence only for garlic and apples. However, the table also suggests that the public sector's market share of fruits and vegetables is increasing.

3.64 There are three commodity procurement methods: (i) by contract with farmers/cooperatives; (ii) direct purchase from farmers and public sector farms; and (iii) purchase from central markets. Prices for fruits and vegetables are determined according to the category to which they belong. Thus, Category II commodity prices are determined by the Supreme Agricultural Council on a seasonal basis. Category IV commodity prices are determined at the provincial level and adjusted semiweekly consistent with free market prices. Although a limited amount of grading is performed by GCFV, most grading is undertaken only at the retail level.

3.65 Price margins are established by the Ministry of Supply and Internal Trade and are generally adhered to. Prices within the marketing channels are also cost-plus prices; thus, all costs are recovered, not just raw material costs. The margin for jobbers and wholesalers is 5% for domestically procured commodities. The wholesale margin for imported commodities is 10%. Retail margins are generally 20% except for tomatoes which are permitted 35% due to their higher perishability.

3.66 Relative to the private sector, GCFV is inefficient. It incurs losses on domestically procured items but makes sufficient profits on imported commodities to offset the losses; the overvalued exchange rate makes this arbitrage possible.

Subsidies

3.67 Input Subsidies. The major explicit subsidy on agricultural inputs is fertilizer. Imported potassic and mixed fertilizers comprise a minor portion of total fertilizer use and are generally sold at cost recovery prices. Sufficient nitrogenous and phosphatic fertilizers are produced domestically but high production costs have resulted in subsidy payments to the fertilizer company. The aggregate subsidies for 1982 and 1984 were estimated to be LS 200 and LS 134 million on sales of 218,000 tons and 464,000 tons respectively (a per ton subsidy of LS 917 and LS 289 for the respective years). Barley sales by GOF to livestock producers, until recently, have been subsidized. GOF procures barley from GOTPC and/or imports, provides transportation and storage, and is typically required to sell it below a cost recovery price. However, the fixed selling price requirement was relaxed in 1984 when GOF was unable to obtain foreign exchange at the official rate for international procurement; the barley was procured via a tender payable in Syrian pounds (para 3.17) and subsequent sales were at cost recovery prices.

3.68 The overvalued Syrian pound creates an implicit price subsidy for several crops as the domestic farm price is higher than the equivalent farm-level border price. This is particularly applicable to sugarbeets but also applies to other major crops such as cotton and wheat. Even at an appropriate exchange rate, sugarbeets would probably be subsidized.

3.69 Consumer Subsidies. The overvalued pound creates an implicit import subsidy and export tax. As the value of imports is approximately 200% of the value of exports, a large net trade subsidy is created. Imports of agricultural consumption items, excluding processed food and fibers, comprise 15% to 20% of total imports and exceed LS 3.0 billion. Most of these imports are by public sector institutions which obtain foreign exchange at the rate of LS 3.95 = US$1.00. In 1984, the pound may have been overvalued by as much as 185%. Thus, the wheat/wheat flour imports of LS 1.0 billion received an implicit subsidy of about LS 1.5 billion.

3.70 Explicit consumer subsidies exist for five food items; wheat flour/bread, vegetable oil, rice, sugar and tea. The latter became a subsidized item only in late 1985. These subsidies do not impact directly on the agricultural sector as they are financed from the public treasury not by agricultural taxation. The wheat flour/bread subsidy, caused by conflicting price objectives for producer and consumer products, is of overwhelming fiscal importance.

3.71 Wheat flour is sold to both public and private bakeries, with small quantities sold to other public sector institutions at subsidized prices of LS 600/ton for high-quality flour and LS 299/ton for standard quality. About two-thirds of the bread is produced by private sector bakeries. Small quantities of flour are sold to consumers through the General Organization for Public Consumption (GOPC) at cost recovery prices of LS 1.80/kg and LS 1.00/kg for the superior and standard qualities, respectively. Thus, a powerful incentive exists for consumers to purchase bread at LS 1.50/kg and LS 0.85/kg for the respective qualities. The wheat flour subsidy is estimated to have doubled between 1981 and 1985 when it was approximately LS 2.4 billion (Table 3.7).

Table 3.7: SUBSIDY ESTIMATE FOR WHEAT FLOUR, 1980-85

Year	Subsidy (LS Million)
1981	1,197
1982	1,543
1983	1,730
1984	1,852
1985	2,369

Mission estimates

3.72 Rice, sugar, vegetable oil and tea are available at subsidized prices in fixed monthly quotas. Each citizen is entitled to a monthly ration of 1.5 kg of sugar, 750 g of rice, 250 g of vegetable oil and, commencing in 1985, 100 g of tea. Between 1980 and 1984, the domestic ration prices of sugar, rice and vegetable oil remained constant, but the aggregate subsidy bill declined as these items are imported and international prices declined over this period. The ration price increased in 1985, reducing the subsidy still further, but it still totaled over LS 250 million for the three items (Table 3.8). Greater details on consumer subsidies are contained in Annex II.

Table 3.8: SUBSIDY ESTIMATES FOR RATIONED RICE, SUGAR AND VEGETABLE OIL, 1981-85

Year	Rice	Sugar	Vegetable Oil
	(L.S. Million)		
1981	141	580	88
1982	172	667	87
1983	103	395	86
1984	57	335	98
1985	24	138	96

Mission estimates

Recommendations

3.73 The pricing methodology employed (a panterritorial producer price based on an average cost of production plus a margin) coupled with the market structure for strategic commodities, the crop licensing system, the overvalued currency and the objective of low consumer prices for certain food commodities has been costly for the Government, distorting efficient resource use and preventing the development of more efficient marketing institutions. It is recognized that resource efficiency is but one of a number of political-social-economic objectives with which the Government is concerned. However, to assist the Government in identifying the costs of alternative pricing decisions, an efficiency pricing methodology is proposed (Annex II). Specific recommendations follow:

(i) permit market forces to perform a role in price determination for commodities in Categories I and II as currently occurs for commodities in Categories III and IV;

(ii) replace the cost plus pricing methodology with a border pricing methodology as the bases for price determination of commodities which remain subject to price control;

(iii) focus marketing policy on improved efficiency instead of expanding public sector institutions. If necessary, implement control measures to prevent market power exploitation rather than replacing marketing institutions;

(iv) define explicitly the areas of marketing which will remain the domain of private sector institutions to provide an environment for continued investment;

(v) develop a subsidy phase-out program for producer and consumer commodities. If it is deemed appropriate to subsidize consumption for a portion of the population for equity reasons, the target group should be identified and provided with subsidy ration coupons; and

(vi) redefine self-sufficiency in economic rather than physical terms (para. 3.125).

D. Research and Extension Policy

3.74 Objectives and policy related to research and extension focus on improving the technical capabilities of staff, on orienting research toward production problems and linking solutions to the producers through an effective extension service. Another goal of the Fifth 5-Year Plan was the creation of an Agricultural Research Council (ARC). Research and extension activities are oriented toward achieving self-sufficiency objectives, and increasing the value of agricultural exports. Research programs on varietal improvement and cultural practices have been developed, concentrating on perceived production constraints. However, sufficient flexibility exists in the system to address high priority, ad hoc issues as they arise (i.e., sudden insect infestations and/or disease outbreaks). Economic criteria do not have a significant role in determining research priorities.

3.75 It is an objective of the Fifth 5-Year Plan to provide extension services to all farm families. To meet this objective, a network of 600 service units were to be constructed and staffed to provide an extension

staff:farmer ratio of 1:250 in irrigated areas and 1:500 in rainfed areas. Extension is currently being strengthened by providing technical support to field staff and improving the research-extension linkage, with IFAD assistance (paras 1.10 and 1.16).

Performance

3.76 The scope of agricultural research was limited to soils and crops until 1985 when the new research directorates of animal research and of irrigation were established. In the absence of a research coordinator, the coordination role falls to the deputy minister to whom the directors of the four research directorates report. Further, the research priorities are determined by the individual directorates as an agricultural research council remains to be created.

3.77 The research effort has been relatively successful in breeding/adapting HYV of wheat to Syrian conditions. However, the extension service has been less successful in encouraging farmers to adopt HYVs, particularly in rainfed areas. (Technical extension support is being strengthened through the National Agricultural Extension Project [Loan 2621-SYR].) The proportion of irrigated wheat and rainfed wheat areas planted to HYV increased from about 70% to 90% and 10% to 40%, respectively, between 1975 and 1984. This means, however, that 50% of the wheat areas are still planted to local varieties with lower genetic potential. If all wheat areas had been planted to HYVs between 1980 and 1984 and yields were equivalent to those obtained in the areas actually planted to HYVs, production would have been 25% greater during that period (Annex Table I.19). Even if yields in the areas currently planted to local varieties were only 85% of the HYV yields, production would have been 15% greater. This would have translated into average annual reduction in wheat imports of about 260,000 tons. (HYV and local variety yield differentials are greatest when water supplies are plentiful, but HYVs also out-yield local varieties during drought years.)

Table 3.9: WHEAT PRODUCTION UNDER ALTERNATIVE YIELD SCENARIOS

Year	Actual Production	Scenario /1	Scenario /2
	('000 tons)		
1980	2,226	2,816	2,564
1981	2,087	2,741	2,525
1982	1,556	1,936	1,789
1983	1,612	1,854	1,694
1984	1,068	1,301	1,271

/1 Assumes that the areas planted to local varieties would be planted to HYV and would yield at same level as areas actually planted to HYV.

/2 Assumes that areas planted to local varieties would be planted to HYV and would yield 85% of level of areas actually planted to HYV.

3.78 Research recommendations on fertilizer rates are differentiated only on the basis of irrigated and rainfed lands without sufficient considerationof the various soil types and agroclimatic environments. Soil classification work should be accelerated to enable location specific packages to be developed A technical fertilizer package has been developed for barley in Zone 3, but more verification will be required before it can be recommended.

Recommendations

3.79 There are two major organizational issues which need to be resolved to obtain maximum benefits from research investments. With the recent addition of two new research directorates, irrigation and livestock, a research coordinator is needed to coordinate research budgets and activities between the various directorates as there are limited research issues which can be resolved in isolation. The coordinator would also perform a liaison role with the international organizations operating in the country, namely ACSAD and ICARDA and with the extension service. It is recommended that a coordinator position be established to perform these roles; the coordinator would report to the deputy minister and have administrative authority over the research directorates. Also, it is recommended that the ARC, proposed in the Fifth 5-Year Plan be established as a high priority. ARC would provide overall research priority, policy and direction. It would be the responsibility of the research coordinator to implement the directives of ARC.

3.80 Initially ARC may need assistance in identifying and establishing priorities for technical programs including staffing, training and facilities, and in assessing the ongoing research programs. It is recommended that an international organization, such as the International Service for National Agricultural Research, be engaged to assist in an assessment and review of the research programs.

3.81 Specific research recommendations follow; it is recommended that:

(i) research priorities be more guided by economics; the costs of achieving a research objective and the benefits expected to be derived from them be the basis of priority determination;

(ii) work on soil classification be accelerated to permit fertilizer verification trials and fertilizer recommendations to be based on location specific characteristics;

(iii) research focus on both productivity enhancement and cost reduction. Specific foci would include, inter alia, breeding and/or adapting dwarf fruit trees to reduce labor costs; breeding short season varieties and varieties with concentrated maturity periods; minimum tillage for second crops; fertilizer placement and timing; mechanization; water requirements, use, application and allied cultural practices; integrated forage-livestock systems, including barley; and seeding rates and placement. These issues should be assessed economically prior to including them in the research program; and

(iv) water-use efficiency research be accorded a high priority, given that water is the most limiting resource on a national basis. The water efficiency methodologies established by ICARDA should be incorporated into the evaluation of research.

E. Agricultural Credit Policy

3.82 Syria's basic credit objective is to maintain low interest rates for agricultural activities, particularly for those involving cooperatives and state farms, as an incentive to invest in agriculture. Also, it is explicit government policy to make agricultural credit available under terms and conditions consistent with annual production targets and development programs. The main source of institutionalized financing for agriculture is the Cooperative Agricultural Bank (CAB) which provides about 90% of the total institutional credit to the sector. Other sources of credit include the General Organizations of Tobacco and Sugar which finance crop specific seasonal inputs.

3.83 Agricultural credit, as well as input and investment requirements, is one of the variables explicitly planned to achieve 5-year plan targets. The 5-year plan defines the general strategy, but specific credit targets to be financed by CAB are explicitly defined only in the Annual Agricultural Plans. CAB operates 62 branches scattered throughout the country, with representation in every province and in a number of districts and sub-districts. CAB comes under direct control and supervision of the Ministry of Economy and Foreign Trade but works closely with MAAR and the General Union of Peasants. These two entities strongly influence CAB's operations through credit committees and the licensing process.

3.84 Syrian interest rates are governed by the following stated principles:

(i) an incentive savings rate to mobilize private resources;

(ii) a lending interest rate to cover risk, bank expenses and borrowing costs; and

(iii) an interest rate to replenish Government's financial resources.

3.85 Irrespective of these principles, Syrian interest rates are low relative to international levels and domestic inflation. Even the maximum lending rate, in the entire economy, of 9% is negative in real terms, given the recent inflation rate of over 10%. Interest rates for agricultural activities, which range from 4% to 7.5% (except for loans for fruit tree plantings and installation of electrical transformers which have been exempted from all interest), are the lowest in Syria's financial system and are independent of the loan payback period.

3.86 Cooperatives receive preferential interest rates from CAB, of 1.5 percentage points below those charged to private farmers as an incentive for farmers to form or join cooperatives. In return, cooperatives handle the crop license en masse and perform important credit service functions such as preparing the loan applications and distributing, guaranteeing and recovering the loans. The cooperative then onlends to members at one percentage point above its borrowing rate, which is still below the CAB rate available to the individual farmer. State farms also receive preferential interest rates. The interest rate schedule by borrower is indicated below:

Table 3.10: COOPERATIVE AGRICULTURAL BANK LENDING RATES

Borrower	Rate
Public farms	4.0
Cooperatives /1	4.0
over LS 50,000	6.0
Individual farmers /1	5.5
over LS 50,000	7.5

/1 Loans for fruit tree planting and electrical transformers (for irrigation pumps to cooperatives) are interest exempt.

3.87 The CAB supplies seasonal inputs for crop production, either for cash or in-kind credit, to borrowers who possess a production license for the crop. It also provides limited cash for hiring seasonal labor. The sole criterion for obtaining seasonal credit is the possession of a license for the crop requiring the inputs. The credit packages are based on recommended technology and represent an "average" requirement for the "average" agroclimatic and soil conditions of one donum (0.1 ha) of irrigated land and rainfed land in Zones 1 and 2. That is, each crop has two credit packages: one for irrigated land, and one for rainfed land with no differentiation for different soils or microenvironments. A farmer may take less than a full package, but additional inputs must be procured with cash. The CAB officers have no discretionary authority as credit access is independent of managerial capacity and the credit is for a "standard" technical package.

3.88 Medium- and long-term credit are available for the purchase of farm equipment (primarily tractors) and establishing orchards, respectively. In contrast to seasonal lending, an individual farmer's application for a medium-term loan is first reviewed by a technical committee which reviews the documentation and farmer's credentials, verifying land ownership, security and the cropping pattern. The application is then reviewed by an administrative committee which ensures the documentation and requirements are satisfied. Long-term loans can be obtained for establishing orchards if the farmer has MAAR permission to plant such an orchard. Standardized credit packages are available for the various tree crops, which include land preparation, fencing, seedlings and fertilizer.

Performance

3.89 About 200,000 farmers, 40% of the total farm population, received CAB financing in 1984. Of these, about three-fourths were members of cooperatives, and the balance received individual credit. Total CAB credit grew at the rate of 18% annually during the 1975-84 decade, increasing from LS 260 million to LS 1,130 million. Lending to cooperative societies grew faster than private lending during the decade, 22% versus 15%. Consequently, the relative importance of loans to the private sector declined from 66% to 49%, while the share provided to the cooperative sector increased from about 32% to 50%, reflecting relative success in the Government's policy to promote cooperatives. The share of loans provided to the public sector has been very small, dropping to less than 1% in 1984.

3.90 As noted above (paras 3.87-3.88), CAB makes loans of three different maturity classes. Short-term loans (cash and in kind) have maturities of less than one year and are used to finance crop production and animal feed. Medium-term loans have maturities ranging from one to five years and are used to finance machinery and breeding livestock. Long-term loans have maturities from five to ten years and are used to finance land improvement and irrigation development, development of orchards, and selected building construction. Long-term loans have increased from an insignificant amount to 15% of the total in 1984. Both cooperatives and individual farmers have participated in the increased long-term credit demand, which grew at annual rates of 64% and 82%, respectively. Growth in medium- and short-term lending has been at much more modest rates, although they still comprise about 25% and 60%, respectively, of the loan portfolio (Annex Table I.22). Lending targets have been exceeded in aggregate and in most categories during the past five years, except for credit to the public sector.

3.91 Crop financing utilized about 70% of CAB's lending, with the balance allocated to livestock, land improvement, machinery and equipment, and construction. Lending for cereal production grew in excess of 30% annually, while cotton, the other major crop financed, grew by only 10% annually. Fruit tree lending grew modestly through 1983; but in 1984 was quadruple the level in 1983. These credit allocations reflect Government's policy to emphasize self-sufficiency in cereals and expand the production of fruit trees.

3.92 The overall loan recovery rate has improved over the past five years, from 78% to 92%. But, inadequate details are available to determine the source of delinquent debtors; cooperative members, individual farmers, long-term, short-term, etc. CAB has limited discretionary authority regarding lending, nevertheless, it is an effective institution in making inputs available in a timely fashion. Further, CAB realizes sufficient profits from its commercial transactions in handling inputs to compensate for the losses incurred on the credit operations (Annex Table I.21). However, profits have been marginal during the last two years.

Recommendations

3.93 As interest rates in general are low, is is recommended that the entire rate structure be reviewed with the objective of introducing positive real interest rates and mobilizing rural finances by attracting more deposits. Further, the interest rate subsidy, financed through CAB's input supply profits, should be phased out. The rates in agriculture, as elsewhere, should perform an allocative role. More flexible credit packages are also recommended.

3.94 Long-term lending for fruit tree orchards is becoming a more important component of CAB's loan portfolio. As these loans are fully exempted from interest and there are no fees to recover administrative costs, CAB's capital will be reduced. Consequently, it is recommended that some form of cost recovery be implemented. It is recognized that Government wishes to limit the costs farmers incur during orchard establishment and prior to the reaping of benefits. A nominal interest rate or fee could be levied or capitalized during the years of establishment and standard long-term rates could apply when repayment of principal commences, i.e. when the trees begin bearing fruit.

3.95 As production policy is liberalized and farmers make more of their production decisions the timely provision of inputs will require rapid responses by the input supply agencies to meet farmer's needs. Therefore, it is recommended that CAB's input supply monopoly be relaxed to permit other institutions/suppliers to provide inputs and services. Cooperatives are well positioned to identify farmer requirements; they currently provide a conduit for inputs and should be permitted to serve as primary input suppliers. Similarly, with the presence of public (CAB) and cooperative suppliers in the market, private suppliers would be compelled to provide timely services and competitive prices.

F. Irrigation Policy

3.96 The objectives of irrigation policy are twofold; the expansion of irrigated areas, and the intensification of land use. A high priority in the Fourth and Fifth 5-Year Plans was the completion of ongoing projects, but the targets were overly ambitious as the Fourth and Fifth 5-Year Plans, respectively, proposed to bring 240,000 ha and 200,000 ha under irrigation in the Euphrates basin alone.

3.97 Policies and investments aimed at the extension of irrigated areas accorded priority to large-scale projects most notably in the Euphrates basin. This orientation is partially a function of MOI's evolution. MOI evolved from the Ministry of the Euphrates Dam. Also, it is based on the fact that the Euphrates River represents the single largest water resource available. However, there is no international agreement on sharing either this resource or the Tigris river with Turkey or Iraq, the other riparian countries.

3.98 Within MOI, two major development institutions focus on developing the water resources of the Euphrates basin. The General Organization of Land Development (GOLD) and the General Organization for the Exploitation and Development of the Euphrates Basin (GOEDEB) are responsible for the design and construction of physical structures, and land reclamation including subsequent operation and maintenance, respectively. There is a need, however, for a supra "Water Resources Agency" to focus on policy for developing and allocating water resources intersectorally. Balancing the several competing demands for water would be a major responsibility of the agency. It would also be responsible for collecting/analyzing water resource information, developing a program of hydrological gauging stations, completing a water well inventory, and periodic updating of the Water Master Plan for Syria.

3.99 On the basis of a 20-year old Water Master Plan (currently being updated), some 640,000 ha have been identified as irrigable in the Euphrates basin. These potentially irrigable areas have been broadly defined by the eight development areas contained in the following list and are also identified on Map IBRD 19557. The first five listed areas have been accorded first priority based upon several criteria including: (i) proximity to the water source; (ii) either gravity irrigable or low pumping heads required; (iii) preference of reclamation of new areas over rehabilitation of currently irrigated areas, i.e., prefer extensive over intensive systems; (iv) rehabilitation of saline areas; and (v) high economic rates of return. Consistent with a phased approach, the development areas have been subdivided into several project areas. In addition, 130,000 ha have been identified as potentially irrigable, in the upper Khabour Basin.

Development Area	Size -(ha)-
Maskana	166,000
Middle Euphrates	27,000
Balikh	143,000
Upper Mayadeen	40,000
Lower Euphrates	125,000
Rassafa	25,000
Lower Khabour	70,000
Areas around Lake Assad	44,000
Total	640,000

3.100 The potentially irrigable area of 640,000 ha represents the gross area that can be covered by schemes in the Euphrates basin. However, the net irrigable area, which is the land actually suitable for irrigation purposes, may be only two-thirds of the gross area. Land classification studies are inadequate to separately define the cultivatable land and the gross areas.

3.101 Large schemes outside the Euphrates basin are the responsibility of the Directorate of Land Reclamation, MOI. The Directorate of Dams, MOI, is responsible for design and construction of medium and small dams (storage capacity less than 50 million m^3). The Water Master Plan does not include medium and small dams; thus, individual feasibility studies are carried out, on an ad hoc basis when requests are made for the development of a particular water resource. The studies are neither coordinated nor comprehensive, encompassing only the scheme under consideration. The Directorate of Irrigation is responsible for designing the irrigation networks fed from these dams. Operation and maintenance (O&M) responsibility lies with the provincial engineering services office, which has neither the staff nor the financial resources to undertake this work.

3.102 The medium and small dams, on average, operate at about 50% of design capacity for several reasons including: (i) inadequate hydrological and hydrogeological investigations during design; (ii) some dams were built on seasonal rivers with flows in only 1-in-2 to 1-in-4 years; (iii) multiple dam construction on the same river resulted in insufficient water availability for downstream reservoirs; and (iv) unexpectedly rapid siltation.

3.103 The private irrigation sector consists of individual farmers exploiting groundwater, primarily through wells, and individuals/cooperatives pumping river water, primarily in the Lower Euphrates. In 1983 some 65,000 irrigation pumps were in use, evenly divided between individuals and cooperatives. Legally, licenses are required to drill and use wells; the licenses specify the extent of water use and require renewal every ten years. However, a large proportion of the wells are not licensed, and there is no monitoring of water use (nor are groundwater levels and well yields monitored). Wells are under the control of MAAR and include some schemes which were constructed by MOI and later handed over to cooperatives or individual farmers. The following table indicates the number of well licenses issued in recent years and the areas irrigated from wells.

Table 3.11: WELL LICENSES AND IRRIGATED AREAS

Year	Number of Licenses	Areas Irrigated	
		Licensed	Unlicensed
		(ha)	
1979	9,140	111,560	125,940
1980	9,780	116,653	120,447
1981	9,078	116,905	131,095
1982	9,866	116,433	142,967

Source: State Planning Commission, 1985.

3.104 The recently formed DIR within MAAR has the responsibility for field irrigation. Prior to its creation, no government institution was responsible for land leveling, defining crop water requirements, analyzing irrigation efficiencies and conducting research on irrigation techniques. DIR is also responsible for O&M of the major works in the private sector. Maintenance at the field level is the farmers' responsibility.

3.105 Operation and maintenance responsibilities and activities are not well defined; in the Euphrates basin GOLD and GOEDEB share responsibility. GOLD has procured some maintenance equipment with IBRD assistance (Loan 1682-SYR) and although GOEDEB has equipment, staffing levels are inadequate for optimum operation. Some of the large projects outside the Euphrates area also have their own O&M units within the project administration. Medium and small projects rely on the "Engineering Services Offices" of the provinces. However, these units are also responsible for other infrastructure such as roads, water supplies, etc., and lack equipment, financial resources and adequate qualified personnel. MOI establishes maintenance schedules but limits its own work to major repairs which are rehabilitation activities rather than maintenance.

3.106 Tariffs. Water charges have remained constant since 1972 when they were reduced from a cost recovery level to a flat rate of LS 70/ha/year. This rate is inadequate to cover even the small amount of O&M activities that are undertaken and contributes nothing to investment cost recovery. Nor does this nominal rate apply to areas fed from dams as the tariff legislation did not specifically include them. Neither does it apply to newly reclaimed areas in the Euphrates basin, pending decision on whether investment costs should be recovered. Within the traditional sector, pump irrigation allegedly costs LS 600/ha, which includes an unspecified amount of maintenance.

Performance

3.107 Physical targets in the Fourth and Fifth 5-Year Plan were not only overly ambitious; they were also inconsistent with the proposed investments (paras 2.01-2.03). Although substantial financial resources have been invested in land reclamation over the past decade, the amount of new land brought under irrigated cultivation has been very limited. The limited success is partially due to the initial decisions to invest in large structures/projects which have long gestation periods; it is also partially due to a combination of common factors including lack of adequate financial resources, lack of trained personnel and high personnel attrition rates, lack of equipment and spares, etc. Some irrigation networks have been developed in unpopulated areas necessitating the construction of other infrastructure to attract settlers, e.g., Balikh, and the irrigation potential remains underexploited.

3.108 The concentration of effort in the Euphrates on expansion of irrigated land has resulted in relative neglect of areas outside the Euphrates basin and of intensifying production in irrigated areas. The cropping intensity of all irrigated areas increased from 1.13 to 1.32, about 10%, (Table 3.12) over the decade but the increase in rehabilitated gravity fed irrigated areas was much greater. Rehabilitation, which was expected to improve cropping intensity, has focused on gravity irrigation systems. Thus, the increase in the overall cropping intensity occurred primarily in the gravity fed areas which comprise only 20% of the total irrigated area.

Table 3.12: CROPPING INTENSITY

Year	Rainfed	Irrigated
1975	0.64	1.13
1976	0.66	1.15
1977	0.63	1.19
1978	0.61	1.24
1979	0.57	1.14
1980	0.62	1.23
1981	0.60	1.17
1982	0.63	1.23
1983	0.67	1.23
1984	0.62	1.32

Source: Derived from SAR, MAAR, Annual Agricultural Statistical Abstract, various issues.

3.109 Data were neither available on the size and location of areas brought under irrigation nor on the irrigated areas that went out of production. However, the net area under irrigation increased at an annual rate of 1.5% during the 1975/84 decade with most of the growth occurring during the second quinquennium (Table 3.13). The areas irrigated by wells (private) accounted for most of the net expansion as they grew at an annual rate of 3.6%.

Table 3.13: IRRIGATED LAND AREA BY METHOD OF IRRIGATION

	Pump				
Year	Wells	Other	Total	Gravity	Total
1975	203.8	208.6	412.4	103.7	516.1
1976	226.6	205.1	431.7	115.0	546.7
1977	216.2	211.1	427.3	103.5	530.8
1978	216.0	200.5	416.5	102.5	519.0
1979	237.5	195.5	433.0	106.4	539.4
1980	237.1	186.6	423.7	115.3	539.0
1981	248.0	207.1	455.1	111.7	366.8
1982	259.4	189.1	448.5	106.2	554.7
1983	266.6	197.7	464.3	115.5	579.8
1984	295.0	205.9	500.9	117.1	618.0

Source: SAR, CBS, Statistical Abstract, various issues.

3.110 An essential component required for the successful completion of projects and successful development of irrigated agriculture, particularly in the Euphrates basin, is the completion of the field level systems. Existing projects are well designed; main and secondary and some tertiary canals are lined. However, this sophistication in the conveyance and distribution systems is not complemented by efficient in-field irrigation. Field irrigation is mainly flood irrigation with rudimentary land leveling, resulting in inefficient water use. As land reclamation continues, the effects of this design choice will be manifested by water shortages and increased drainage needs. The introduction of new irrigation techniques, sprinkler and drip, and better surface irrigation techniques, furrow, gated pipes, etc., should be accorded a high priority and research should address optimum combinations of water and other production inputs to maximize farm income. O&M in the existing irrigated lands is inadequate. MOI and MAAR must coordinate their activities to ensure water is more efficiently used. Improving the efficiency of water use expands the effective water supply.

3.111 The net to gross area ratio appears to be low for many projects. The Water Master Plan upon which projects are based indicates the potentially irrigable area rather than the area suitable for irrigation. Insofar as the net irrigable (and irrigated) areas are unknown, priority should be accorded to establishing these data correctly to facilitate more rational planning. If the net areas are substantially under the gross areas, the investment costs and rates of return will be seriously affected.

3.112 Groundwater resources are neither cataloged nor controlled. Groundwater is successfully exploited by the private sector, but the lack of control may result in aquifer depletion. Well licensing and water extraction should be monitored to ensure this water resource is appropriately planned.

Recommendations

3.113 Increased irrigation areas and improved irrigation efficiency are keys to accelerating the expansion of agricultural production. To identify water resource availability and effectively plan its use, an agreement is needed on the sharing of rivers that cross national boundaries. The ambitious targets established in the Fourth and Fifth 5-Year Plan exceeded the resources available for irrigation development and many of the projects undertaken to achieve those targets require lengthy development periods. The net achievement has been only a fraction of that planned. Therefore, the following recommendations are proposed for the Sixth 5-Year Plan.

(i) Establish/strengthen organizations and staff involved in sector planning and analyses to subject proposed projects to a more rigorous review and develop realistic implementation schedules. All projects should be carefully re-evaluated prior to initiating any work on them;

(ii) Rationalize the investment funds for irrigation development and concentrate on the completion of the technically and economically viable projects underway (If not technically and economically viable, they should be abandoned.);

(iii) Create a Water Resources Agency which would have overall policy responsibility in water development and allocation for both agricultural and nonagricultural uses. It would also be responsible for periodic updating of the Water Master Plan;

(iv) Accelerate the Water Master Plan updating and include a water/land balance for the entire country. Heretofore, the Euphrates basin has been emphasized, and it should continue to receive emphasis as that area has the largest water development potential. However, other areas should not be excluded. The Water Master Plan should incorporate medium and small dams and assess groundwater potential and control;

(v) Provide technical and extension assistance to farmers for increasing the on-farm efficiency of water use through improved water distribution systems, weed control, land leveling and installing sprinkler or drip systems where feasible. Successful application of sprinkler and drip systems will conserve water and increase yields. Flood irrigation as currently practiced has an efficiency of about 50% resulting in excess water use. Cropping patterns need to be reassessed and crop water requirements recalculated. Improving the very low cropping intensities must be addressed;

(vi) Develop an O&M program. GOEDEB currently performs this role in the Euphrates basin. For other irrigation projects, a directorate of O&M within MOI should be created. O&M in the private sector should remain the responsibility of farmers, under the supervision of MAAR; and

(vii) Establish a pricing system for irrigation water use that would provide incentives to individual farmers to utilize water more efficiently. Providing free irrigation water or at low standardized charges to farmers encourages wastage. If it is currently infeasible to relate charges to actual water use, then as a minimum the water charges should reflect the variable cost of providing water. A longer-term objective should be costing water to recover the investment costs.

G. Crop Production Policy

3.114 The basic objectives of crop production policy are self-sufficiency and increasing foreign exchange earnings/savings. A feature of production policy is the crop planning and licensing process which aims to direct resources toward crops which will achieve the national objectives. This mechanism leaves little allocative discretion to producers except their own labor and the diversion of inputs from one crop to another. The licensing system is also a control mechanism to ensure that technically sound crop rotations are practiced and long-term benefits are realized by maintaining land productivity. Producers have little discretion in their crop production mix except in the area of vegetable production where they are relatively free to plant preferred varieties.

3.115 Production targets and licensing, while designed to achieve global objectives and maintain long-term productivity, appear to be planned and based on perceived need rather than to optimize output and maximizing benefits with the resources available. The planning exercise does not systematically collect and include farm-level data. Labor availability and labor distribution requirements, in particular, are ignored in the planning process. As individual farmers are more aware of their particular resource constraints, they adjust their allocation, to the extent possible, to maximize returns to those available resources. The farmers' desire to maximize resource efficiency thus contributes to the disparity between planned targets and achievements. As such detailed information is not available to planners, greater flexibility should be permitted in individual licenses.

3.116 A more liberal interpretation of self-sufficiency may permit a more liberal or discretionary production policy. By interpreting and promoting self-sufficiency as the value of agricultural production rather than quantitative self-sufficiency, resources would be allocated more efficiently. If the net agricultural trade balance equaled zero, the country would be self-sufficient even though wheat imports might be substantial. The relevant issue is whether Syria can use resources more efficiently in the production of export crops and import the needed requirements or if they are more efficient in the production of domestically consumed commodities.

3.117 Water availability is considered in the resource requirements of production plans, but it is not analyzed in an optimization context. Water is the nation's most limited production resource, but is not economically priced and farmers do not have an economic incentive to use it efficiently.

Performance

3.118 Agricultural outputs, particularly crop production, are subject to the vagaries of climate. As Syria is basically a semiarid/arid country, the timing and amount of rainfall is crucial to the agricultural sector. Recognizing that periodic drought occurs, the aggregate value (1980 prices) of crop output increased rapidly during the late 1970s but has since declined from the peak reached in 1980-81. The production of cereals has been the most variable as they are predominantly rainfed crops. The value of industrial crops (cotton, sugarbeets and tobacco), which are either irrigated or produced in the highest rainfall areas, has increased consistently over the past decade. Fruit and vegetable production moved to a relatively higher plateau in the 1980s but has not exhibited a growth trend.

3.119 The self-sufficiency objective has been elusive as the self-sufficiency ratio for cereals declined from .82 in the late 1970s to .79 in the early 1980s. However, fruit and vegetable self-sufficiency has steadily increased reaching 1.00 in 1983 and 1984. Overall agricultural self-sufficiency has remained relatively stable at about 0.91 (Annex Table I.8).

3.120 The value of agricultural exports has increased, primarily as a result of expanded cotton exports. Further, the value of products manufactured from agricultural produce (textiles) has also increased. However, the value of agricultural imports has increased more rapidly; consequently, the agricultural trade balance has become even more negative.

Comparative Advantage

3.121 The financial prices of crops, the crop yields and their labor requirements are the major criteria used by farmers to plan production (to the extent that licensing permits flexibility). Similarly, the exchange rate coupled with the domestic and international prices of crop commodities determines the financial subsidies applicable to trade. However, these financial values do not identify the relative economic benefits and costs to the economy of producing various crops.

3.122 Given the different agroclimatic zones, farm types and farm sizes, five farm models were developed to represent various production situations. The models are described as follows:

	Farm Model				
	I	II	III	IV	V
Agroclimate:	Zone I	Zone III	Zone I	Zone II	Zone III
Rainfall	>500 mm	< 250mm 3.5 ha irrig.	> 350mm 2.7 ha irrig.	250-350 mm	< 250 mm
Size	10 ha	5.5 ha total	2.7 ha total	22 ha	35 ha

Typical cropping patterns and crop budgets were established for the models and were then analyzed in financial and economic terms. Given the uncertainty of the appropriate exchange rate, the data were analyzed using the tourist exchange rate of LS 8.25 = US$1.00. The analyses were designed to identify the crops which would provide the greatest net benefits to the economy. The following table contains financial and economic crop prices and the estimated average and marginal economic returns per hectare for the various crops by farm type.

3.123 The financial returns to labor reflect the financial prices prevailing in 1984. If the exchange rate had been at the rate of LS 8.25 = US$1.00 (as used in the economic analyses), the financial prices would probably be nearer the economic prices, thus increasing the financial labor returns. The data must be interpreted cautiously as some technical constraints are not considered. Examples include: (i) cotton cannot be planted continuously but must be fitted into a crop rotation; (ii) large increases in vegetable production would oversupply the domestic market and, without an export market, the economic returns would diminish drastically, further, it is improbable that domestic vegetables could be efficiently produced to meet requirements in the off-season; thus, off-season requirements would continue to be imported; (iii) many crops are nonsubstitutes, apples and other tree crops may be grown on slopes and/or rocky areas where field crops could not be grown; and (iv) in the more arid zones there is no cash crop alternative to barley, although pasture forages may be an option.

Table 3.14: CROP COMPARATIVE ADVANTAGE, 1984
at exchange rate LS 8.25=US$1.00

Crop	Yield (ton/ha)	Crop Prices (LS/ton) Financial	Crop Prices (LS/ton) Economic	Financial Labor Returns (LS/day)	Net Economic Returns (LS/ha) Average	Net Economic Returns (LS/ha) Marginal
Farm Model I						
Wheat	1.7	1,230	1,615	901	2,333	2,223
Lentils	1.0	1,600	3,165	79	2,392	2,234
Melons	10.4	650	2,360	79	19,774	19,239
Sesame	0.6	5,500	7,251	57	1,480	1,158
Olives	8.8	3,500	4,425	175	30,782	29,219
Grapes	5.5	2,330	5,945	84	25,298	24,490
Farm Model II						
Wheat	3.4	1,230	1,615	210	2,788	2,550
Potatoes	21.0	1,650	2,056	204	24,575	23,536
Cotton	2.9	4,000	6,250	68	8,667	7,770
Maize	3.1	1,700	1,495	74	93	(,262)
Tomatoes	27.7	1,000	2,001	102	36,174	35,158
Apples	8.0	3,270	3,018	47	(1,505)	(4,335)
Barley	1.0	1,640	1,668	500	1,653	1,584
Sugarbeets	50.0	330	-26	95	(12,061)	(13,279)
Farm Model III						
Potatoes	1.2	1,650	2,055	91	9,304	8,879
Peanuts	1.6	5,250	10,544	54	9,585	9,218
Tomatoes (IRR)	20.0	1,000	2,001	59	22,671	22,341
Citrus	9.8	4,183	1,860	196	4,506	3,688
Wheat	1.3	1,230	1,615	248	411	357
Chickpeas	1.1	2,620	2,311	112	1,191	1,102
Tomatoes (rain)	14.0	1,000	2,001	58	15,850	15,595
Sesame	0.7	5,500	7,251	73	2,463	2,355
Cucumbers	24.0	1,790	3,843	238	79,813	79,426
Olives	8.8	3,500	4,425	172	30,854	29,252
Farm Model IV						
Wheat	1.0	1,230	1,615	480	1,260	1,145
Barley	0.87	1,640	1,668	830	1,466	1,412
Chickpeas	0.75	2,620	2,311	81	566	462
Melon	6.4	650	2,360	40	10,380	9,958
Sesame	0.5	5,500	7,251	60	1,492	1,291
Olives	8.8	3,500	4,425	172	30,703	29,346
Farm Model V						
Barley	0.6	1,640	1,668	417	844	753

3.124 Within these constraints, there are several conclusions to be derived from the table:

(i) the financial prices make wheat and barley production particularly attractive to farmers, and with sufficient land, more cereals would probably be planted, if unconstrained by licensing requirements;
(ii) contrary to financial returns, the net economic benefits of producing wheat and barley are among the lowest of the various crops in all the farm models;
(iii) the financial labor returns as well as the economic returns, particularly for wheat and barley, vary greatly between farm models reflecting the different resource bases. This diversity indicates the ineffectiveness of controlled prices and crop licensing as instruments to allocate resources efficiently and promote income equity;
(iv) increased production of vegetables, to the extent they replace imports, is a highly efficient use of resources;
(v) grape and olive production to meet domestic needs also uses resources very efficiently;
(vi) the net economic benefit of producing cotton is relatively high and should be encouraged;
(vii) unless maize productivity can be vastly increased its production will have marginal economic returns and should be discouraged;
(viii) without reduced production costs or improved productivity, apple production will result in negative economic benefits; and
(ix) sugarbeet production is quite costly to the economy as the economic returns are highly negative and should not be promoted.

3.125 Several types of sensitivity analyses can be performed on the data to develop second round conclusions, these include: (i) the impact of increased production efficiency, i.e. reduced costs; (ii) the impact of increased productivity or the amount that yields would need to increase for some crops to be economically competitive; (iii) the impact of alternative exchange rates; and (iv) the change in financial prices necessary to create financial benefits consistent with economic benefits. <u>These comparative advantage analyses do not include any processing costs, therefore, are indicative; they would require updating and more detailed inquiry into prices, costs, production inputs and marketing potential prior to interpreting the results as definitive</u>.

Recommendations

3.126 To improve agricultural foreign exchange earnings/savings, self-sufficiency should be redefined in value terms instead of physical output (para. 3.73). It is recommended that the planning exercise focus on optimizing output value with the resources available and place less emphasis on target outputs. Economic prices (those prices in the world market adjusted for transport, etc., which reflect the levels at which commodities can be externally purchased or sold) should play a greater role in production decisions; thus, it is recommended that crops be evaluated in comparative advantage terms as part of the planning exercise. (para. 3.115).

3.127 Commodity licensing is practiced in a number of countries; it may be particularly appropriate to limit output of commodities which face relatively price inelastic demand situations, e.g. tobacco. However, it is recommended that licensing be phased out over a period of time for most crops with farmers making the production decisions based upon their perceptions of resource access and economic returns. While the licensing process is being phased out, it should be made as flexible as possible to adapt to altered environments, e.g., if rainfall is below normal or the rainy season is delayed, farmers may wish to plant barley instead of wheat, although wheat would be preferred in a "normal" rainfall situation. As the licensing process is relaxed, the extension service must ensure that farmers understand the technical reasons for crop rotation.

3.128 It is recommended that water resource planning and water-use efficiency—including water control and allocation—and economic pricing be more explicitly incorporated into the planning exercise. Given that water is the most limiting production resource, optimizing water use will maximize aggregate returns to the economy. Focusing on water as the primary constraint will require extension and research staff to play a major role; production patterns and cultural practices will need to be oriented toward water-use efficiency, water conservation and water productivity instead of the more traditional land productivity.

H. Livestock Policy

3.129 The main objectives for the livestock subsector, as reflected in the Fourth and Fifth 5-Year Plans, were to raise production to achieve self-sufficiency in animal products and to maintain low consumer prices. These objectives were to be achieved through inter alia: (i) the promotion of cooperative societies to better organize grazing practices and protect the natural pastures; (ii) the development of breeding centers, particularly for dairy animals; (iii) the improvement of veterinary services; (iv) the improvement of feed availability; and (v) the provision of additional credit for livestock development and supplemental feeds.

3.130 During the Fourth 5-Year Plan, resources were mainly directed toward livestock production activities (cattle, sheep, poultry production centers and some breeding centers), while, during the Fifth 5-Year Plan, production investments were better complemented with investments in improved support services (veterinary, livestock water points, extension, etc.) and the provision of additional credit for feedstuffs. This strategy was complemented with pricing and marketing policies for livestock products and animal feeds.

3.131 Support for the subsector includes the Emergency Feed Reserve (EFR) and the National Feed Revolving Fund (NFRF) created in 1977, to ensure that feed and credit were available. Feedstuffs supplied by government entities and feed credit from NFRF are, however, distributed under a tightly controlled rationing system.

3.132 The National Feed Policy Committee within MAAR has overall responsibility for coordinating feed policy guidelines including recommended feedstuff prices, rations, size of the EFR and necessary imports. Feedgrain policy delegates responsibility for barley procurement to GOTPC, storage to the Silo Company and import/distribution to GOF. GOF procures, manages and allocated other feedstuffs. However, some feed mills are owned by the Silo Company which mixes feeds to specifications supplied by GOF.

3.133 Meat has been subject to retail price control for several years. Rigid maintenance of artificially low official retail prices, has led to increased disparities between official and actual market prices. Sheep meat sales generally reflect retail prices, conditioned by current carcass wholesale price rather than official control prices. Exports of the indigenous Awassi sheep to the Gulf countries, a traditional market, were banned from 1977 to 1982 to maintain a low domestic meat price. The export ban kept the price lower than the export parity price and artificially promoted domestic demand for high-quality meat, discouraging the consumption of imported lower quality meat, sold at similar prices. Due to the persistence of clandestine exports and the oversupply of sheep meat in local markets under the drought conditions of 1982-83, the export ban was lifted.

Performance

3.134 The value of livestock production increased rapidly during the late 1970s, but since 1981 has remained relatively stable (in constant 1980 prices) at about LS 4.0 billion (Annex Table I.3). Consequently, the increase in supplies of per capita animal proteins during the 1970s came mostly from the fast expansion of the poultry industry. Poultry meat and egg production grew at the annual rates of 27% and 12%, respectively, over the 1975-84 decade. The Government authorized only negligible imports of poultry products, while it supported and subsidized the importation of maize, the main feedgrain for the poultry industry. In poultry product marketing, prices are basically determined by supply and demand conditions. Although the General Organization of Poultry now produces about 10% of the egg supply, the number of producers, processors, wholesalers and retailers is sufficient to maintain competitive marketing costs.

3.135 The allocation of livestock feeds is based on the number of animals owned. The cooperative and public sectors have first priority on feedstuff allocation over individual farmers, reflecting Government's priority for further expansion. Sheep and cattle owners are legally required to register their animals with the cooperatives or with the Range and Sheep Directorate within MAAR. Private poultry production also requires licensing. The number of sheep and cattle registrations and poultry licenses is the criterion for the allocation of subsidized feed supplies. During years of short supply, official prices remain steady but rations are adjusted downwards, and/or feeds are imported to meet minimum domestic requirements. During the last decade, maize imports have increased twenty-fold, mainly in support of the poultry industry but also in support of the cattle industry. Barley was imported during 1983 and 1985 for the sheep industry. But the recent lack of foreign exchange for official imports led to barley imports by the private sector and relaxation of GOF's controlled price. The lack of an appropriately managed EFR caused the national sheep flock to decline by 25% to 30% in 1983-84 due to starvation, crisis slaughtering and emergency export.

3.136 Prior to the severe drought of 1983-84, the availability of supplemental feed at subsidized prices promoted the expansion of the national sheep flock at an average growth rate of 10%. In 1983 it reached a peak estimated at 13.4 million head, a flock size substantially above the supportability of the natural pasture and domestic barley production under normal climatic conditions. Subsidized feed prices also promoted inefficient feeding practices. For example, supplemental feed was used for sheep maintenance (contributing to the high rate of growth) instead of sheep fattening.

3.137 The multiplicity of agencies involved in the feedgrain industry, and foreign exchange and raw material shortages have periodically resulted in the production of inconsistent quality of milled feeds and in an inefficient utilization of feedstuffs by the livestock subsector. Both poultry and dairy cows need consistent rations to maintain high productivity. Thus, the inconsistency in feed quality has caused production fluctuations.

Recommendations

3.138 The susceptibility of Syria to drought and the resulting impact on sheep production (due to less forage crop by-products and feedgrain availability) indicate the need for a feed reserve. The reserve should be institutionalized and administered by a single agency. Its responsibilities should be clearly stated. The recommended price policy underlying the feed reserve is full cost recovery prices to prevent supplemental feeding for low return activities (para 3.135). Further, to encourage on-farm barley storage, the ban on private interdistrict movement should be lifted.

3.139 Reorganization and consolidation of the public sector agencies responsible for feedstuffs is urgently required. To improve productivity, it is recommended that the private sector be permitted to engage in feedgrain imports and feed milling. Given the heavy dependence on domestically produced feed, the feed rationing system has tended to exacerbate feed shortages. It is recommended that the allocation through the physical quantity rationing system be replaced by full access at cost recovery prices.

3.140 Over the past decade, growth in the poultry industry was promoted through subsidized feeds and protected from imports. Having attained self-sufficiency, this growth cannot be sustained unless an export market can be identified. Before further investment is undertaken in the poultry sector, it is recommended that the economic viability of the domestic industry be contrasted with the cost of frozen poultry imports. To establish profitability and ensure sustainability of sheep flock size, it is recommended that Awassi exports be systematically promoted, with full private sector participation. Consistent with export promotion is the need for a realistic exchange rate for the proceeds of authorized livestock exports.

I. Mechanization Policy

3.141 Mechanization in Syria has two basic objectives: one is to improve labor productivity (where labor is in short supply, primarily harvest labor) thereby reducing costs. An attendant sub-objective aims at facilitating expansion in the rehabilitated areas, where population density and labor availability are particularly low. The other basic objective is to improve the efficiency of other inputs such as better seedbed preparation and more timely planting to improve yields.

3.142 The General Organization for Agricultural Mechanization (GOAM) is responsible for identifying and developing mechanical equipment appropriate for Syrian farming conditions. Also, it performs two other farmer services: (i) it provides mechanical services including repairs; and (ii) it undertakes stone removal on a fee basis in the less arid regions of the country.

Mechanization has a crop focus and a production stage focus. The crop focus priority is on mechanizing the principal field crops. Crop production is divided into three stages: seedbed preparation, which is the priority stage; plant servicing (fertilizing, cultivating, spraying, etc.); and harvesting (including farm-level transport). Thus, seedbed preparation of field crops is GOAM's top mechanization priority.

Performance

3.143 The major mechanization achievement has been in cereals, where seedbed preparation and harvesting stages are estimated to be 90% mechanized. This has been achieved primarily at the initiative of individual farmers and cooperatives who have purchased tractors and mechanical equipment, primarily from the State Tractor Factory. GOAM has initiated mechanization work on root crops (potatoes and sugarbeets) and cotton; cotton seed planters are now manufactured and distributed by GOAM. GOAM tests new agricultural machinery on its development station, where it also demonstrates equipment use and offers training in machinery operation.

3.144 GOAM has three major workshops (in Hama, Aleppo and Hasaka) for servicing the Ministry's and its own tractors and equipment and also those belonging to farmers and cooperatives. Thirteen agricultural machinery centers are located in the main agricultural areas to provide hire services and service farm equipment. These centers provide only 5% of the "for hire" agricultural services; 95% is provided by cooperatives and private farmers.

Recommendations

3.145 Given the development nature of much of GOAM's work, a close liaison with the research directorates is necessary. While financial feasibility studies are conducted prior to undertaking mechanization development, it is recommended that mechanization priorities be based on economic efficiency; as determined by studies on productivity enhancement, labor savings and mechanization costs. As some components of mechanization are foreign exchange costs, the distortions created by the overvalued exchange rate must be factored out to ensure that mechanization is not subsidized at the expense of agricultural employment.

3.146 It is recommended that mechanical hire services be left to the cooperatives and individual farmers unless it is demonstrated that they are unable to provide adequate services. It is in the interest of the economy to let the nonpublic sectors invest in production capital, thereby permitting public sector resources to be directed toward research and development.

J. Land Policy and Performance

3.147 The Agrarian Reform Law of 1958 and subsequent legislation defined the maximum area of ownership of various types of land. It succeeded in reducing large landholdings which were primarily tenant operated prior to 1958. However, the problem of small and fragmented farms remains and worsens. The average size landholding is about ten ha which disguises the fact that about 80% of the holdings are below the average and that one-third are below 2 ha. Due to land fragmentation the average holding is composed of 4.5 individual plots, and even holdings under 2 ha average 3.1 plots.

3.148 These statistics illustrate two problems: the first is that of farmers who have insufficient land to earn an adequate income. The number to which this applies is undefined, but farms of a hectare or less, even if irrigated, would be unable to provide an adequate income. The second is the fragmentation of small holdings which generally impedes mechanization and agricultural development.

3.149 The private sector owns and operates most of the land, while cooperatives and public sector operate an insignificant amount. In 1984 only 8 production cooperatives existed, operating about 3,000 ha. These were established by the government through relocating farmers displaced by the filling of Lake Assad. Although, government owns about 25% of the arable land, the public sector operates only nine state farms comprising 54,468 ha (18,429 ha actually cropped) which produce crops and another 8 state farms occupying 3,440 ha which produce livestock products. Several crops are produced on state farms but cereals occupy about 90% of the cropped area. Except for one farm in Al-Hassaka Province, yields have generally been less than 50% of that obtained by individual farmers. However, milk productivity per dairy animal has been relatively high on the state farms.

3.150 About 360,000 private landowners own 3.6 million ha, which include about 75% of the cultivated area. The balance of the land is owned by the Government except for the small areas occupied by cooperative and state farms. About 48,000 tenants operate 730,000 ha, leased primarily from the public sector. The remaining farmers (32,000) are sharecroppers. The sharecropper is legally protected by the maximum proportion of the production value which may accrue to the landlord, and ranges from 20% on rainfed field crops to 50% on irrigated vegetables. These legal maxima are difficult to enforce, and it is recognized that actual shares may exceed the legal maximum.

3.151 Land policy, as related to land reclamation, is largely subsumed under irrigation policy, and development authority is vested in the Ministry of Irrigation. However, land development also includes stone removal from lands in the rainfed agricultural areas, and this activity falls within the domain of MAAR. Several ministerial agencies are involved in stone removal including two project entities, Directorate of Agricultural Affairs and GOAM. Major investments in irrigation and stone removal are geographically separate, and coordination between the two types of land reclamation is limited.

Recommendations

3.152 As there has been no spontaneous development of cooperative production units and state farms have met with mixed success, it is recommended that: (i) the promotion of cooperative farming be abandoned; and (ii) no further investments be made in public sector farms. Allocating cooperative farm land to the individual participants should be considered. If state farms are incapable of generating profits for reinvestment on a self-sustaining basis, they should become part of the service infrastructure for the private sector (research, breeding animal production, etc.).

3.153 Land reform measures have contributed to national equity objectives. However, the small size of many farms and the fragmentation of holdings hinder mechanization and require the farmers to seek income supplementation outside agriculture, with possible neglect of the farm resources; hence, land consolidation must be addressed. To permit an adequate family income from agriculture, a certain minimum farm size is needed. Government is encouraged

to develop a land policy which will address this issue, land taxes should be considered as a component of land policy. Land consolidation will release labor from the sector; and although some can be absorbed in labor short areas and in land reclamation areas, rural industries or other employment opportunities would need to be created.

3.154 Given the major investments necessary to develop land through irrigation/drainage and stone removal, it is recommended that the relative economic cost and benefits of both reclamation methods be thoroughly assessed to identify priority investments. Land development policy must be coordinated between the responsible ministries to ensure efficient investment of government resources.

IV. STRATEGY

A. Introduction

Constraints

4.01 Agricultural expansion faces a series of development constraints; physical, institutional, policy and financial. Agricultural production is quite diverse reflecting the array of agroclimatic environments that characterizes Syria. Agricultural planning is given a substantive and exceptionally detailed role in designing production plans, allocating land and licensing crops. Instead of planning the policy framework and institutional environment conducive to achieving sectoral objectives, the detailed processes of achieving targets and objectives are planned. Such detailed planning utilizes technical manpower inefficiently as the vagaries of climate and the paucity of farm-level data do not support such detail.

4.02 Much of the Syrian land area is hostile to agricultural production; arid, saline and stony soils are serious production constraints. Only a relatively small proportion of Syria's land area receives rainfall sufficient to support cultivated agriculture without supplemental irrigation (IBRD Map No. 19556). Further, within these rainfed agricultural areas, much of the land is rocky, constraining land productivity and prohibiting mechanization. The Government is engaged in several stone removal projects, one of which is being assisted by IBRD (Loan 2124-SYR). Major investments have been made in irrigation infrastructure during the past decade, but expansion has been modest, increasing by only 20%. The total irrigated area in 1984 was about 620,000 ha. Some of these investments have long gestation periods, and additional investments will be necessary before the benefits are generated. Given the minimum rainfall regime over most of the country, it is imperative that the investments initiated be expeditiously completed. While additional areas are being brought under irrigation some older irrigated areas are being lost due to excess salinity. Several reclamation projects are under way to improve the drainage and flush the salts from the soil, one of which is assisted by IBRD (Loan 1682-SYR).

4.03 The institutional constraints include extension and research services, marketing, credit and input supply, and manpower. The Government is upgrading the extension service, with some assistance from IBRD (Loan 2621-SYR), and the linkages with research are being improved. The areas covered by agricultural research have recently been broadened but some problem areas are still not addressed; further, available manpower and financial resources are insufficient to adequately address the array of research issues.

4.04 Marketing constraints apply to most commodities. The monopoly marketing status, which has been accorded several parastatal agencies, has created inefficiencies in secondary markets. GOTPC has the legal procurement rights for wheat and barley; however, over 900,000 tons of wheat and most barley escape GOTPC procurement. This, coupled with GOF's inability to provide sufficient feedgrains at the controlled price, has diverted wheat to livestock uses and diverted most of the barley to the parallel market. While this does not affect the total quantity of barley available, it does affect the cost as, technically, the parallel market is illegal and operates clandestinely--and any such market is more costly than one which operates openly. Cotton processing (ginning) capacity is fully utilized, and more capacity is needed. Ginning is currently a public sector monopoly; however, cooperatives and/or the private sector could also operate ginneries effectively and efficiently as they do in many countries.

4.05 Fruit and vegetable marketing is more competitive than most other commodities. However, the General Company for Fruits and Vegetables handles large portions of trade for individual fruits and provides the conduit for fruits and vegetables for processing. While this is a useful role, it may be more efficient for processing plants to contract with cooperatives for produce; or for cooperatives to invest in processing.

4.06 Seasonal inputs are supplied solely by CAB, which also provides the financing. Inputs are available in adequate quantity but are provided only upon proof that the applicant has a license for the crop to which the inputs will be applied. If production controls were relaxed, CAB would need the technical expertise to evaluate farm plans to effectively discriminate between viable and nonviable production options, and would need the flexibility to adjust input supplies consistent with farmer initiatives.

4.07 Government's detailed planning and parastatal marketing agencies places heavy demands on public sector resources. The planning efforts have high manpower requirements for designing, analyzing and developing detailed plans. Similarly, as large parastatal marketing agencies replace small private entrepreneurs, highly qualified managerial talent is required.

4.08 The policy constraints are the most severe, with the exchange rate the most important for the sector at large. The Syrian pound is seriously overvalued and, until more appropriately valued, will prevent effective price and trade reform. Price policy is based on production and marketing costs and does not reflect supply-demand conditions either domestically or internationally (except for some fruits and vegetables), which distorts aggregate resource use. Production policy (crop licensing) complements price policy as it also constrains production decisions. Marketing and trade policy limits private sector participation in domestic marketing and external trade.

4.09 Government resources comprise the bulk of agricultural marketing investments as private sector investments are legally constrained. Given that government resources are limited, it would be in Syria's economic interest to mobilize investment resources from the private and cooperative subsectors. Well defined policies outlining areas in which (i) the private sector is free to participate, and (ii) the public sector will not participate, would encourage private sector investments. Also, this would permit public sector resources to focus on improving those areas where the private sector does not participate.

B. Strategy

Future Agricultural Strategy

4.10 Syria's overall objectives of expanded foreign exchange earnings/savings and self-sufficiency are sound but can be achieved more efficiently by interpreting them in economic terms. The two objectives are complementary and support policies are mutually reinforcing, if foreign exchange earnings/savings is interpreted on a net contribution basis and self-sufficiency is interpreted in value terms. Efforts to expand foreign exchange earnings/savings have previously focused on import substitution which is easier to address than export promotion, as the commodity markets and target quantities are well defined. However, import substitution typically focuses on the gross foreign exchange savings rather than the net savings. For example, the focus on sugarbeets between 1980 and 1984 resulted in rapidly expanding production, but costs were excessive and the foreign exchange savings were illusory. In fact, the foreign exchange costs of production were greater than the foreign exchange value of the sugar produced.

4.11 The major criterion in determining whether to promote the expansion of export commodities or import substitutes should be comparative advantage. Policies based on comparative advantage would maximize foreign exchange earnings/savings and use resources more efficiently. Given the difficulty in altering production patterns after infrastructure investments are made, particularly in perennial crops and livestock, the estimation of long-term border prices should be a component of the strategy.

4.12 Redefining self-sufficiency in value terms is consistent with improved foreign exchange earnings/savings. For food security reasons, it may be desirable to produce certain proportions of consumption requirements. However, to meet physical self-sufficiency requirements, it is not necessary that Syria produce all of the consumption requirements (food, feed, etc.), but only that the value of all agricultural commodities produced be equal to or greater than the value of those consumed. Consumption requirements not met through domestic production could be met through trade.

4.13 The strategy should be supported by appropriate exchange rate, pricing and marketing policies. With domestic prices reflecting relative border prices, improved productivity could be achieved by liberalizing production policy and allowing producers to respond to relative prices and to produce commodities consistent with their individual comparative advantages. Production decisions based on perceived financial returns would result in improved resource use efficiency fully consistent with the expanded foreign exchange earnings/savings and economic self-sufficiency objectives of Government.

4.14 Heretofore, different exchange rates have applied to different commodities distorting production incentives and resource allocation. A component of the proposed strategy is the consolidation of the various exchange rates. A unified exchange rate, applicable to all commodities and sectors, would improve incentives and resource use efficiency.

4.15 The agricultural strategy should attempt to minimize intrasectoral distortions caused by artificial barriers (subsidies, tariffs, quotas, etc.). The net effect of these barriers, on the various agricultural commodities, should be neutral. But agriculture would be discriminated against if it were unprotected and other sectors were protected. Therefore, to minimize intersectoral distortions the agricultural sector should be accorded the same degree of protection as other sectors.

4.16 Another element of the proposed strategy is the prioritization of public sector investments in agriculture. The limited budgetary resources emphasize the need to make efficient use of government resources, particularly in the irrigation subsector which absorbs the bulk of the agricultural development funds and in which several projects are underfunded. Resource use is more efficient if the priority claims are reduced consistent with resource availability. Further, given staff shortages and attrition in irrigation projects the strategy must also ensure that project staffing and financial resources are consistent.

4.17 As water resources are expected to be the most limiting production resource, a greater understanding of irrigation potential, priority and alternatives would be useful. Thus, an irrigation sector review is suggested. The review should include inter alia: (i) an inventory of water development projects and their prioritization; (ii) a review of groundwater resources and their development; (iii) an assessment of farm-level water use and control; and (iv) a review of the financial resources potentially available for water resource development.

4.18 A parallel issue is land development in the higher rainfall areas through stone removal. Several stone removal projects have been initiated after feasibility studies have indicated their viability. However, the nationwide potential for improving production and land productivity through stone removal is undefined. Similarly, the relative merits of land development through irrigation/drainage versus stone removal are uncertain. Thus, a review of stone removal as a component of land development is encouraged. Items of review should include: (i) an inventory of land suitable for development; (ii) a generalized assessment of increased productivity created by stone removal; and (iii) a prioritization of potential projects.

4.19 Limited agricultural research and applied technology appear to be constraints to improved labor and land productivity. Mechanization efforts are under way, but without well defined support in terms of economic analyses. Also, research must address water-use optimization through improved cultural practices and crop breeding to improve land productivity and multiple cropping for both irrigated and rainfed agriculture. (Research should investigate shorter season and more drought tolerant varieties, concentrated maturity periods for mechanical harvesting, optimum fertilization rates and placement for different agro-environmental zones, dwarf fruit trees, etc.) Barley research must be addressed from a farming systems perspective rather than a grain yield approach. Barley is an important component of integrated

crop-livestock farming; consequently, total dry matter yield, straw and grain, is more important than just grain yield. The research complex is divided into a number of administrative organizations. Coordination between organizations and an institutionalized process for establishing priorities is needed, particularly as financial constraints have increased. Consequently, an agricultural research review is proposed.

4.20 There are several other areas which would benefit from study and review. Cooperatives perform important roles in credit/input distribution and assembling commodities for market. Cooperatives' activities should be evaluated with a view of improving their efficiency and identifying additional roles they could undertake in providing marketing services. Agricultural marketing and processing is an area currently dominated by public sector institutions, many of them monopolies. More needs to be known about their operational efficiency and potential for efficiency improvement. The agro-industrial requirements over the medium term should be identified and planned.

Annex I
Table 1

Agricultural Sector Fifth Five-Year Investment Program
(SL million)

	Fifth Five-Year Plan Allocation for Specific Projects	Total 1981-85 Budg. Alloc.	Total 1981-85 Actual Exp.	1981 Annual Plan	1981 Actual Exp.	1982 Annual Plan	1982 Actual Exp.	1983 Annual Plan	1983 Actual Exp.	1984 Annual Plan	1984 Actual Exp.	1985 Annual Plan	1985 Actual Exp.
MAAR Central Administr.	1,868	2,723	1,630	376	224	427	284	615	339	668	373	647	410
Fruit Tree Dev. 1/	485	814	450	103	42	139	60	167	99	190	125	215	124
Southern Regional Proj.	-	405	93	-	-	-	-	140	5	147	20	118	68
Research & Extension	342	302	229	34	25	53	45	69	55	67	53	79	51
Plan Protection	226	245	197	48	34	35	32	40	35	72	46	50	50
Livestock Svcs. 2/	509	525	338	112	84	118	80	113	73	108	68	74	53
Other Ag. Projects 3/	15	66	49	18	11	16	15	16	11	7	6	9	6
Forestry & Desertif.	291	366	274	61	48	66	52	70	61	67	55	102	58
Gen. Org. for Seeds 4/	3	3	3	1	1	2	2	-	-	-	-	-	-
Land Service 6/	90	90	75	18	13	18	14	22	19	17	11	18	18
Gen. Org. for Poultry	29	393	239	43	10	84	39	95	81	85	57	86	52
Gen. Org. Cattle	358	368	238	67	45	87	47	102	77	65	39	47	30
Gen. Org. for Fish	14	33	13	7	1	9	2	3	1	8	5	6	4
Gen. Org. for Fodd.	-	21	17	11	8	10	9	-	-	-	-	-	-
Gen. Org. for Machin.	166	357	241	49	23	64	48	56	45	74	70	114	55
Sub-Total Agric. Sub-Sect.	2,528	3,988	2,456	569	325	701	445	893	562	907	555	918	569
Gen. Org. Maj. Projects 3/	448	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gen. Org. Euph. Bssin (Livestock)	3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

1/ Fruit tree planting and production of seedling programs.
2/ Desert wells, veterinary services, cattle improvement program and training centers.
3/ Integrated dev. project, support to the cooperative system, machinery service shops.
4/ Potatoe seed multiplication and storage.
5/ Limitation, porcelation etc.
6/ Excluding investments for the Ghab development program.
7/ Ghab development program and construction of training centers.

Source: MAAR, Directorate of Agricultural Economics.

Annex I
Table 2

Preliminary Investment Budget for 1986
(in million SL)

Item	On-Going Projects	New Projects	Total
M.O.A. (Central Office)	1,189	10	1,198
Poultry Organization	114	6	120
Livestock Organization	71	10	80
Fish Organization	10		10
Seed Multiplication Organization	9		9
Mechanization Organization	70		70
Al Ghab Dev. Organization	50		50
State Farm Organization	-		-
Directorate Gen. of Lands	22		22
Sub-Total M.O.A.	1,535	26	1,561
M.O.I. (Central Office)	1,790	95	1,885
Gen. Org. for Land Dev. (GOLD) of Euph. Basin	1,491	-	1,491
Gen. Org. for Expl. & Dev. of Eup. Basin (GODEB)	219	-	219
Sub-Total M.O.I.	3,500	95	3,595
Total	5,035	120	5,156

Sources: MAAR, Directorate of Agricultural Economics, State Planning Commission.

ANNEX I
Table 3

GROSS DOMESTIC PRODUCT AND VALUE OF AGRICULTURAL PRODUCTION
1975-1984

	Gross Domestic Product at Mkt Prices				Value of Agricultural Production						Total Economic Output	Popl'n
	current prices		1980 prices		Total	Crop	Animal	Total	Crop	Animal		
	Agric.	Total	Agric.	Total	current prices			constant 1980 prices				
	million Syrian Pounds											(thou)
1975	3,706	20,712	6,778	40,003	4,413	3,332	1,081	8,373	6,322	2,051	58,808	7,380
1976	4,817	24,915	8,081	43,404	5,693	4,283	1,410	9,789	7,393	2,396	64,924	7,627
1977	5,001	27,264	7,033	42,678	6,044	4,341	1,703	8,704	6,218	2,486	65,417	7,883
1978	6,850	32,696	8,698	46,232	7,805	5,747	2,058	10,347	7,340	3,007	70,551	8,148
1979	6,857	39,302	7,423	47,793	8,099	5,613	2,486	9,335	6,182	3,173	75,094	8,421
1980	10,383	51,799	10,383	51,799	12,476	9,225	3,251	12,476	9,225	3,251	82,732	8,704
1981	12,739	66,492	10,820	57,107	15,923	11,090	4,833	13,313	9,371	3,942	92,310	8,996
1982	13,849	70,527	10,545	58,957	17,512	11,826	5,685	13,051	8,850	4,201	95,526	9,298
1983	15,626	73,049	10,458	58,705	19,137	13,523	5,613	13,091	8,916	4,175	98,561	9,611
1984	14,805	75,342	9,563	56,713	19,028	13,343	5,684	12,081	8,010	4,070	98,486	9,934
1985	17,339	79,549	10,097	57,094	22,174	15,179	6,995	12,654	8,684	3,971	98,501	10,267
gr.rate	0.174	0.158	0.043	0.041	0.185	0.174	* 0.212	0.046	0.035	0.074	0.059	0.034
t,test	13.135	12.407	3.882	7.973	14.079	12.957	14.526	4.710	2.953	8.070	12.179	4.710

Source: Central Bureau of Statistic, Statistical Abstract, various issues.

ANNEX I
Table 4

Value of Agricultural Production

	Total	cereals	legumes fruit&veg	milk prod.	livestock	eggs
			million Syrian L.			
current prices						
1975	4,412.9	1,181.4	1,309.5	362.8	536.0	124.1
1976	5,693.4	1,704.2	1,657.5	512.4	694.3	141.8
1977	6,043.7	1,110.8	2,245.3	600.8	854.3	168.6
1978	7,804.6	1,742.5	2,962.2	789.8	925.5	241.3
1979	8,098.8	1,390.5	3,098.4	929.1	1,084.2	340.1
1980	12,475.8	3,141.3	4,789.4	1,477.1	1,132.2	469.8
1981	15,923.5	3,079.5	5,805.2	1,967.7	2,031.7	559.5
1982	17,512.1	2,344.4	7,378.6	2,473.1	2,227.1	673.6
1983	19,136.7	3,655.8	6,832.3	2,442.4	2,087.8	704.8
1984	19,155.5	2,064.5	8,378.9	2,401.9	2,135.8	743.3
1985	22,173.2	4,182.8	8,321.6	3,058.2	2,643.5	793.4
constant prices						
1975	8,292.7	1,864.1	3,783.9	843.4	840.3	230.9
1976	9,694.8	2,419.2	4,359.8	1,007.1	994.7	250.1
1977	8,620.3	1,413.2	4,449.1	969.7	1,110.9	234.8
1978	10,347.0	2,042.5	3,962.1	1,257.1	1,253.5	346.0
1979	9,355.2	1,495.3	3,511.0	1,263.6	1,333.2	423.1
1980	12,475.8	3,141.3	4,789.4	1,477.1	1,132.2	469.8
1981	13,313.1	2,830.8	5,152.1	1,647.1	1,572.3	536.3
1982	13,051.2	1,906.0	5,402.2	1,723.3	1,700.4	584.4
1983	13,091.1	2,202.1	4,900.5	1,759.3	1,596.4	599.4
1984	12,081.1	1,222.0	5,067.7	1,575.5	1,646.3	626.0
1985	12,654.7	2,138.9	4,907.4	1,709.0	1,483.6	530.4

Source: MAAR, The Annual Agricultural Statistical Abstract, various issues.

ANNEX I
Table 5

VALUE OF AGRICULTURAL EXPORTS

SITC		1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
		million S.L										
0	total	88.2	151.0	205.3	243.1	253.9	230.7	230.9	523.5	273.9	392.4	169.3
00	l.animals	12.5	3.4	4.6	25.2	35.7	20.0	4.0	0.4	58.3	205.8	95.2
01	meat	0.0	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
02	dairy/egg	1.5	1.9	1.8	1.4	1.7	5.3	5.1	1.2	4.0	2.6	4.3
03	fish	0.6	0.6	0.4	0.7	0.7	0.7	0.5	0.2	0.3	0.3	0.2
04	cereals	1.5	36.9	60.5	15.3	4.6	18.8	79.3	352.7	35.4	0.4	0.6
041	wheat											
042	rice											
043	barley		29.6	55.7				24.9	344.4	35.2	1.1	0.1
044	maize											
045	other											
046	wh. flour											
047-9	other											
05	fruit&veg	55.5	81.4	119.6	182.2	197.4	171.0	121.7	147.9	153.4	165.9	64.2
054.2	pulses	26.3	46.4	78.7	123.3	141.8	106.9	40.5	65.0	39.6	97.9	11.1
057.1-2	citrus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.8	0.0	0.0
06	sugar	3.5	6.4	7.7	10.0	10.4	9.9	12.1	9.9	16.0	14.7	3.9
07	tea,cafe,	8.4	10.4	7.2	1.7	4.1	3.9	4.5	10.0	6.2	2.5	0.6
08	an. feeds	4.4	9.2	3.0	2.4	0.7	0.8	3.5	1.0	0.0	0.0	0.0
09	other	0.0	0.2	0.3	0.0	0.5	0.0	0.1	0.1	0.3	0.2	0.2
12	tobacco	81.5	93.2	19.1	24.3	29.1	112.5	26.3	71.7	68.9	27.1	5.5
21	hide/skin	22.5	28.6	38.5	35.4	38.6	13.3	20.0	16.1	4.1	24.3	17.8
22	oilseeds	8.1	9.1	14.6	15.4	10.9	7.8	7.2	4.2	2.9	8.8	1.2
26	fibers	480.5	686.7	901.9	698.5	823.1	729.9	588.8	508.1	730.3	1,148.8	601.6
263	cotton	449.3	660.1	848.6	686.3	775.0	681.8	576.3	469.9	697.5	1,122.8	578.5
268.1-2	wool	29.7	34.4	49.6	9.5	45.5	47.6	12.1	36.7	31.6	22.2	21.2
4	an&vegOil	1.2	1.3	1.9	10.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
65	yarn/fabr	114.7	141.7	86.4	86.6	166	222.3	272.6	344.7	653.3	355.1	309.3
84	clothing	79.3	108.5	86.6	92	101.7	102.5	213.4	223.4	242.1	233.5	194.1
All Agriculture		682.0	969.9	1,181.3	1,027.3	1,158.2	1,094.2	873.2	1,123.6	1,080.1	1601.4	795.4
Total Exports		3,440.9	4,141.3	4,119.0	4,159.6	6,453.3	8,272.7	8,253.7	7,953.0	7,547.4	7,274.8	6,426.5

Source: Central Bureau of Statistic, Foreign Trade Statistics, various issues.

ANNEX I
Table 6

VALUE OF AGRICULTURAL IMPORTS

SITC		1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
						million LS						
0	total	1,114.4	1,053.1	1,124.3	1,597.8	1619.9	2,101.1	2,771.2	2,020.4	3,275.0	2,850.2	2,657.7
00	l.animals	25.4	8.2	10.7	42.9	40.1	107.4	233.7	66.3	77.0	31.6	122.9
01	meat	31.0	8.6	13.5	26.2	30.3	52.9	232.3	91.5	92.8	23.9	62.2
02	dairy/egg	103.9	180.7	207.9	237.3	269.5	367.0	251.9	366.0	272.7	254.9	301.4
03	fish	25.7	10.0	18.1	38.2	412	55.0	73.1	51.1	67.3	36.5	47.8
04	cereals	295.6	219.9	334.1	347.2	433.3	552.2	793.8	367.5	1,326.8	1,595.5	971.6
041	wheat	103.7	3.7	129.5	82.7	6.7	21.0	26.9	8.3	442.7	861.7	349.5
042	rice	90.8	88.6	53.4	158.9	171.5	65.8	127.9	109.4	363.7	128.3	104.7
043	barley	0.0	0.1	0.0	0.1							
044	maize	9.0	15.4	8.7	33.3	76.8	106.6	160.5	230.6	72.1	175.8	328.3
045	other	0.0	0.0	0.0	0.0							
046	wh. flour	87.2	106.1	132.0	55.9	162.2	209.1	435.8	13.1	440.5	191.8	22.8
047-9	other	4.8	6.0	10.3	16.3							
05	fruit&veg	130.7	205.5	240.3	292.0	364.9	382.1	392.2	254.9	171.2	178.5	187.0
054.2	pluses	0.3	0.7	0.9	1.0	2.2	3.4	0.8	2.4	2.8	6.0	
057.1-2	citrus	43.2	57.3	69.7	70.1	90.7	115.2	134.4	87.0	74.6	75.0	
06	sugar	441.2	319.8	150.0	260.7	207.7	272.3	456.3	524.3	738.7	286.8	281.3
07	tea,cafe,	36.7	67.8	90.2	264.5	157.5	167.0	146.8	175.7	233.5	249.5	325.8
08	an. feeds	20.0	27.1	51.1	77.2	62.6	116.3	167.7	109.8	264.4	179.1	341.9
09	other	4.3	5.3	8.4	11.4	12.7	28.8	23.3	13.2	30.9	13.8	15.6
12	tobacco	150.4	204.0	62.5	33.8	47.7	36.4	123.8	78.2	39.6	60.9	8.6
21	hide/skin	12.8	14.4	19.8	23.1	18.2	30.9	23.8	21.0	25.1	21.1	29.5
22	oilseeds	1.2	11.0	8.8	15.2	17.7	23.8	9.5	37.5	46.7	22.6	37.1
26	fibers	76.2	48.6	62.1	52.9	60.6	77.9	70.1	63.1	47.6	51.8	71.2
263	cotton	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
268.1-2	wool	23.7	20.0	23.2	16.8	26.9	34.6	24.7	15.2	9.8	14.8	
4	an&vegOil	47.1	40.4	63.8	78.7	81.9	112.7	181.1	133.0	149.5	97.0	238.1
65	yarn/fabr	273.9	373.2	475.7	431.8	522.1	557.7	560.3	392.7	480.9	450.0	593.0
84	clothing	14.9	27.8	34.4	32.3	24.0	45.3	74.1	22.8	10.3	5.3	9.3
	All Agriculture	1,402.1	1,371.5	1,341.3	1,801.5	1,846.0	2,382.8	3,179.5	2,333.2	3,583.5	3,103.6	3,042.2
	Total Imports	6,172.7	7,964.6	10,496.6	9,650.2	13,095.8	19,195.4	19,781.0	15,735.3	17,828.6	16,153.7	15,570.4

Source: Central Bureau of Statistic, Foreign Trade Statistics, various issues.

ANNEX I
Table 7

AGRICULTURAL TRADE BALANCE

million LS

SITC		1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
0	total	-1026.2	-902.1	-919	-1354.7	-1364	-1870.4	-2540.3	-1496.9	-3001.1	-2457.8	-2488.4
00	l.animals	-12.9	-4.8	-6.1	-17.7	-4.4	-87.4	-229.7	-65.9	-18.7	174.2	-27.7
01	meat	-31	-8.2	-13.3	-26.2	-30.3	-52.9	-232.3	-91.5	-92.8	-23.9	-62.2
02	dairy/egg	-102.4	-178.8	-206.1	-235.9	-267.8	-361.7	-246.8	-364.8	-268.7	-252.3	-297.1
03	fish	-25.1	-9.4	-17.7	-37.5	-411.3	-54.3	-72.6	-50.9	-67	-36.2	-47.6
04	cereals	-294.1	-183	-273.6	-331.9	-428.7	-533.4	-714.5	-14.8	-1291.4	-1595.1	-971.5
041	wheat	-103.7	-3.7	-129.5	-82.7	-6.7	-21	-26.9	-8.3	-442.7	-861.7	-349.5
042	rice	-90.8	-88.6	-53.4	-158.9	-171.5	-65.8	-127.9	-109.4	-363.7	-128.3	-104.7
043	barley	0	29.5	55.7	-0.1	0	0	24.9	344.4	35.2	1.1	0.1
044	maize	-9	-15.4	-8.7	-33.3	-76.8	-106.6	-160.5	-230.6	-72.1	-175.8	-328.3
045	other	0	0	0	0	0	0	0	0	0	0	0.0
046	wh. flour	-87.2	-106.1	-132	-55.9	-162.2	-209.1	-435.8	-13.1	-440.5	-191.8	-22.8
047-9	other	-4.8	-6	-10.3	-16.3	0	0	0	0	0	0	0.0
05	fruit&veg	-75.2	-124.1	-120.7	-109.8	-167.5	-211.1	-270.5	-107	-17.8	-12.6	-122.8
054.2	pulses	26	45.7	77.8	122.3	139.6	103.5	39.7	62.6	36.8	91.9	11.1
057.1-2	citrus	-43.2	-57.3	-69.7	-70.1	-90.7	-115.2	-134.4	-87	-63.8	-75	0.0
06	sugar	-437.7	-313.4	-142.3	-250.7	-197.3	-262.4	-444.2	-514.4	-722.7	-272.1	-277.4
07	tea,cafe,	-28.3	-57.4	-83	-262.8	-153.4	-163.1	-142.3	-165.7	-227.3	-247	-325.2
08	an. feeds	-15.6	-17.9	-48.1	-74.8	-61.9	-115.5	-164.2	-108.8	-264.4	-179.1	-341.9
09	other	-4.3	-5.1	-8.1	-11.4	-12.2	-28.8	-23.2	-13.1	-30.6	-13.6	-15.4
12	tobacco	-68.9	-110.8	-43.4	-9.5	-18.6	76.1	-97.5	-6.5	29.3	-33.8	-3.1
21	hide/skin	9.7	14.2	18.7	12.3	20.4	-17.6	-3.8	-4.9	-21	3.2	-11.7
22	oilseeds	6.9	-1.9	5.8	0.2	-6.8	-16	-2.3	-33.3	-43.8	-13.8	-35.9
26	fibers	404.3	638.1	839.8	645.6	762.5	652	518.7	445	682.7	1097	530.4
263	cotton	449.3	660.1	848.6	686.3	775	681.8	576.3	469.9	697.5	1122.8	578.5
268.1-2	wool	6	14.4	26.4	-7.3	18.6	13	-12.6	21.5	21.8	7.4	21.2
4	an&vegOil	-45.9	-39.1	-61.9	-68.1	-81.3	-112.7	-181.1	-133	-149.5	-97	-238.1
65	yarn/fabr	-159.2	-231.5	-389.3	-345.2	-356.1	-335.4	-287.7	-48	172.4	-94.9	-283.7
84	clothing	64.4	80.7	52.2	59.7	77.7	57.2	139.3	200.6	231.8	228.2	184.8
All Agriculture		-720.1	-401.6	-160.0	-774.2	-687.8	-1288.6	-2306.3	-1229.6	-2503.4	-1502.2	-2246.8
Total Trade		-2731.8	-3823.3	-6377.6	-5490.6	-6642.5	-10922.7	-11527.3	-7802.3	-10281.2	-8878.9	-9143.9

ANNEX I
Table 8

COMMODITY SELF SUFFICIENCY RATIOS

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
All Agric	0.86	0.93	0.97	0.91	0.92	0.91	0.87	0.93	0.89	0.93
Cereals	0.80	0.90	0.80	0.84	0.76	0.85	0.81	0.99	0.74	0.56
Fruit&Veg	0.95	0.93	0.95	0.96	0.95	0.96	0.96	0.99	1.00	1.00
Dairy	0.78	0.74	0.74	0.77	0.78	0.80	0.89	0.87	0.90	0.90
Livestock	0.92	0.98	0.98	0.95	0.97	0.89	0.81	0.93	0.95	1.08
Eggs	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.00	1.01	1.00

1/ Agricultural Imports and Exports based on SITC Sections 0 and 4 and Divisions 12, 22, and 26.

ANNEX I
Table 9

External Trade by Sector and Exchange Rate

(million Syrian Pounds)

	Private Sector				Public Sector			
	Export		Import		Export		Import	
	official price	parallel price	official price	parallel price	official price	parallel price	official price	parallel price
1975	1.7	339	-	1567	2783	155	170	3941
1976	9.1	523	-	2236	3204	266	716	4513
1977	4.5	486	-	2766	3255	412	1068	6230
1978	1	446	-	2592	3219	400	872	5859
1979	1.3	504	-	3387	5116	751	1926	7328
1980	1	587	-	3890	5900	1689	3155	8556
1981	1	708	-	3874	5601	1863	4994	10335
1982	-	828	-	2759	4532	2542	4249	8421
1983	-	812	-	2060	4198	1771	3961	8721
1984	-	717	-	1302	4347	1687	3810	9626
1985	1	485	-	2429	3278	2168	3042	7338

PROPORTION OF TRADE BY PUBLIC SECTOR
AND AT OFFICIAL EXCHANGE RATE

	percent of export by public sector	percent of import by public sector	percent of export official rate	percent of import official rate
1975	90	72	85	3
1976	87	70	80	10
1977	88	73	78	11
1978	89	72	79	9
1979	92	73	80	15
1980	93	75	72	20
1981	91	80	69	26
1982	90	82	57	28
1983	88	86	62	27
1984	89	91	64	26

Source: Central Bureau of Statistics, Statistical Abstract, various issues.

ANNEX I
Table 10

EXTERNAL TERMS OF TRADE

	Index : Unit Values Export	Import	Terms of Trade
	1980 = 100		
1975	40	50	80
1976	51	63	81
1977	55	58	95
1978	59	62	95
1979	77	77	100
1980	100	100	100
1981	111	130	85
1982	97	122	80
1983	91	141	65
1984	93	132	70
1985	91	111	82

DOMESTIC TERMS OF TRADE

	WPI Ag. Raw Material	Retail Price Index	Terms of Trade
	1980 = 100		
1975	66	61	108
1976	71	68	104
1977	77	76	101
1978	81	80	101
1979	87	84	104
1980	100	100	100
1981	133	118	113
1982	154	135	114
1983	154	144	107
1984	170	157	108
1985	209	184	114

Source: Central Bureau of Statistics, Statistical Abstract, various issues.

ANNEX I
Table 11

Commodity Indices and Terms of Trade

		1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
HYV irr. Wheat	op.& input costs	76	76	92	95	100	129	197	225	227	227
	Total cost	63	69	84	91	100	119	169	196	200	198
	Cost/unit	80	87	105	114	100	145	193	218	217	220
	Price/unit	71	86	91	93	100	136	170	176	176	176
	T/T	89	99	87	82	100	94	88	81	81	80
non-irr. Durum	op.& input costs	70	43	53	70	100	70	110	124	135	145
	Total cost	55	40	55	68	100	65	94	104	115	121
	Cost/unit	66	84	87	110	100	117	171	189	189	197
	Price/unit	65	79	86	88	100	131	165	173	173	173
	T/T	98	94	99	80	100	112	96	92	92	87
non-irr. Barley	op.& input costs	44	52	57	72	100	78	99	108	116	123
	Total cost	38	53	55	67	100	76	94	96	105	109
	Cost/unit	79	87	96	119	100	115	142	144	144	149
	Price/unit	72	79	89	89	100	126	140	144	144	175
	T/T	91	91	93	75	100	110	99	100	100	118
non-irr. chickpea	op.& input costs	60	54	85	121	100	122	166	182	198	207
	Total cost	43	41	66	88	100	107	132	135	145	139
	Cost/unit	45	44	68	89	100	107	133	135	123	130
	Price/unit	40	60	72	100	100	100	104	105	105	120
	T/T	89	136	106	112	100	93	78	78	85	92
non-irr. lentil	op.& input costs	66	78	91	109	100	155	211	231	231	226
(red)	Total cost	58	71	87	100	100	163	202	207	201	195
	Cost/unit	84	99	88	99	100	201	150	255	180	177
	Price/unit	114	91	73	73	100	109	137	145	145	164
	T/T	136	92	83	74	100	54	91	57	81	92
irr. lentil	op.& input costs					100		236	282	292	303
(white)	Total cost					100		191	217	265	272
	Cost/unit					100		142	158	150	204
	Price/unit					100		167	185	185	193
	T/T					100		118	117	123	94
irr. maize	op.& input costs	78		102	108	100	148	188	221	224	243
	Total cost	70		92	102	100	138	179	200	208	222
	Cost/unit	70		95	101	100	138	178	200	208	222
	Price/unit	71		94	94	100	181	194	213	213	200
	T/T	101		99	93	100	131	109	107	102	90
irr. cotton	op.& input costs	60	68	80	76	100	137	177	196	213	436
	Total cost	60	74	82	80	100	141	184	192	212	429
	Cost/unit	62	78	94	90	100	148	193	185	206	383
	Price/unit	64	76	81	72	100	117	171	178	179	178
	T/T	103	97	86	80	100	79	89	96	87	46
sugarbeet	op.& input costs	72	68	71	82	100	159	234	245	252	283
	Total cost	65	66	74	83	100	170	242	247	264	291
	Cost/unit	55	65	81	88	100	141	206	182	185	174
	Price/unit	64	64	68	78	100	132	141	150	150	141
	T/T	116	98	84	89	100	94	68	82	81	81

ANNEX I
Table 12

LAND USE

	Cultivatable Land						Land Use		
	Irrigated	Rainfed	Total Cropped	Fallow	Total	Forest	Steppe & Pasture	Other	Total Land
	thousand hectares								
1975	516	3,184	3,700	1,776	5,476	445	8,631	3,966	18,518
1976	547	3,702	4,249	1,295	5,544	457	8,549	3,968	18,518
1977	531	3,336	3,867	1,642	5,509	452	8,531	4,026	18,518
1978	519	3,215	3,734	1,854	5,588	455	8,421	4,054	18,518
1979	539	3,300	3,839	1,847	5,686	459	8,274	4,099	18,518
1980	539	3,354	3,893	1,791	5,684	466	8,378	3,990	18,518
1981	567	3,286	3,853	1,906	5,759	486	8,336	3,917	18,518
1982	555	3,432	3,987	1,814	5,801	491	8,312	3,914	18,518
1983	580	3,490	4,070	1,537	5,607	499	8,384	4,028	18,518
1984	618	3,117	3,735	1,920	5,655	498	8,317	4,048	18,518
1985	652	3,318	3,970	1,653	5,623	516	8,328	4,051	18,518

Cropping Intensity

	Total Cropped Area		Area Under Fruit Trees		Area Under Annual Cultivation							
					Total		Summer		Winter			
	Non-irrig	Irrig	Non-irrig	Irrig	Non-irrig	Irrig	Non-irrig	Irrig	Non-irrig	Irrig	fallow	Cropping Intensity*
(hectares)												rainfed irrig.
1975	3,273,670	578,095	305,116	46,869	2,968,554	531,226	208,745	317,002	2,759,809	214,224	1,776,000	0.64 1.13
1976	3,443,367	620,590	362,912	49,994	3,080,455	570,596	208,423	326,263	2,862,032	244,333	1,295,000	0.66 1.15
1977	3,270,607	620,821	374,556	51,551	2,896,051	569,270	229,197	337,462	2,666,854	231,808	1,642,000	0.63 1.19
1978	3,264,020	632,574	384,709	53,898	2,879,311	578,676	211,548	331,710	2,667,763	246,966	1,854,000	0.61 1.24
1979	3,107,092	605,383	399,748	56,551	2,707,344	548,832	169,737	318,215	2,537,607	230,617	1,847,000	0.57 1.14
1980	3,347,339	646,628	419,391	61,169	2,927,948	585,459	208,991	349,187	2,718,957	236,272	1,791,000	0.62 1.23
1981	3,284,525	653,173	434,815	63,683	2,849,710	589,490	207,516	353,639	2,642,194	235,851	1,906,000	0.60 1.17
1982	3,432,483	665,192	445,061	67,371	3,007,422	597,821	195,582	371,031	2,811,840	226,790	1,814,000	0.63 1.23
1983	3,522,561	696,648	455,542	69,372	3,067,019	627,276	199,758	390,504	2,867,261	236,772	1,537,000	0.67 1.23
1984	3,318,148	791,769	474,680	75,202	2,843,468	716,567	168,799	399,458	2,674,669	317,109	1,920,000	0.62 1.32

Source: Central Bureau of Statistics, Statistical Abstract, various issues.

ANNEX I
Table 13
Page 1

Targets and Achievements in Area, Yield and Production of Major Crops

		Area		Yield		Production		area	Yield	Prod'n
		Target	Achieve	Target	Achieve	Target	Achieve	% of	%of	% of
Wheat		('000 ha)		(kg)		('000 mt)		target	target	target
irr.,HYV	1981	157.5	126.7	2572	2963	405.1	375.4	80.4	115.2	92.7
	1982	179.6	125.1	2718	2685	488.2	335.9	69.7	98.8	68.8
	1983	144.7	147.6	2951	2509	427.0	370.3	102.0	85.0	86.7
	1984	149.1	164.5	3600	2319	536.8	381.5	110.3	64.4	71.1
Wheat										
irr.local	1981	31.3	42.8	2075	2386	64.9	102.1	136.7	115.0	157.2
	1982	26.3	33.4	2135	1917	56.2	64.0	127.0	89.8	114.0
	1983	31.7	22.2	2186	2178	69.3	48.4	70.0	99.6	69.8
	1984	30.7	20.4	2600	2321	79.8	47.3	66.4	89.3	59.3
Wheat										
dry,HYV	1981	239.6	447.3	1501	2063	359.6	922.8	186.7	137.4	256.6
	1982	243.0	476.5	1573	1311	382.2	624.7	196.1	83.3	163.4
	1983	230.8	453.9	1926	1209	444.5	548.8	196.7	62.8	123.5
	1984	246.4	375.2	1937	945	477.3	354.6	152.3	48.8	74.3
Wheat										
dry local	1981	824.4	638.1	829	1076	683.4	686.6	77.4	129.8	100.5
	1982	796.0	587.3	946	906	753.0	532.1	73.8	95.8	70.7
	1983	677.5	666.5	996	967	674.8	644.5	98.4	97.1	95.5
	1984	701.8	546.9	1028	520	721.5	284.4	77.9	50.6	39.4
Wheat										
total	1981	1253.0	1254.9	1227	1663	1537.4	2086.9	100.2	135.5	135.7
	1982	1235.1	1222.3	1350	1273	1667.4	1556.0	99.0	94.3	93.3
	1983	1084.7	1290.3	1489	1249	1615.1	1611.6	119.0	83.9	99.8
	1984	1127.9	1106.9	1609	964	1814.8	1067.1	98.1	59.9	58.8
Lentils										
	1981	127.2	71.7	742	827	94.4	59.3	56.4	111.5	62.8
	1982	119.1	57.6	775	912	92.3	52.5	48.4	117.7	56.9
	1983	106.8	71.4	880	853	94.0	60.9	66.9	96.9	64.8
	1984	82.5	59.5	878	598	72.4	35.6	72.1	68.1	49.1
Chickpeas										
	1981	78.3	84.1	676	749	52.9	63.0	107.4	110.8	119.0
	1982	84.8	56.2	738	659	62.6	37.0	66.3	89.3	59.2
	1983	121.9	94.2	812	794	99.0	74.8	77.3	97.8	75.6
	1984	102.4	53.3	825	673	84.5	35.9	52.1	81.6	42.5
Dry Beans										
	1981	9.4	7.7	1639	1762	15.4	13.6	81.9	107.5	88.1
	1982	8.9	7.7	1661	1839	14.8	14.2	86.5	110.7	95.8
	1983	9.2	7.3	1677	1863	15.4	13.6	79.3	111.1	88.1
	1984	8.1	7.2	1898	1681	15.4	12.1	88.9	88.6	78.7

Targets and Achievements in Area, Yield and Production of Major Crops (con't)

Cotton									
	1981	163.2	143.4	2500	2481	408.0	355.8	87.9	99.2	87.2
	1982	156.7	158.8	2559	2659	401.0	422.2	101.3	103.9	105.3
	1983	158.2	175.7	2571	2996	406.7	526.4	111.1	116.5	129.4
	1984	163.2	178.5	2975	2525	485.5	450.7	109.4	84.9	92.8
Tobacco									
	1981	20.1	12.9	847	970	17.0	12.5	64.2	114.5	73.5
	1982	17.7	13.5	773	1010	13.7	13.6	76.3	130.7	99.7
	1983	16.1	14.1	1031	1015	16.6	14.3	87.6	98.4	86.2
	1984	15.3	14.0	1120	1187	17.1	16.6	91.5	106.0	97.0
Sugarbeets									
	1981	26.0	22.1	23159	25533	602.1	564.3	85.0	110.3	93.7
	1982	29.9	28.9	25852	29934	773.0	865.1	96.7	115.8	111.9
	1983	36.3	31.5	27755	37669	1007.5	1186.6	86.8	135.7	117.8
	1984	37.0	35.7	34453	35524	1274.8	1268.2	96.5	103.1	99.5
Tomato									
	1981	26.8	40.2	18075	17984	520.6	723.0	139.6	99.5	138.9
	1982	32.4	35.5	19819	22261	642.2	790.3	109.6	112.3	123.1
	1983	36.7	40.5	18211	20510	668.4	830.7	110.4	112.6	124.3
	1984	33.6	37.8	21950	19241	737.5	686.2	112.5	87.7	93.0
Potato									
	1981	17.8	22.2	15271	13992	271.8	310.6	124.7	91.6	114.3
	1982	20.5	16.9	15994	16537	327.9	279.5	82.4	103.4	85.2
	1983	23.2	20.0	15488	15754	359.3	315.1	86.2	101.7	87.7
	1984	20.7	18.4	15909	17478	329.3	25.6	88.9	109.9	7.8
Dry Onion									
	1981	8.1	8.8	20894	19935	169.2	175.4	108.6	95.4	103.7
	1982	8.2	9.5	22105	19702	181.3	187.2	115.9	89.1	103.3
	1983	7.7	8.8	23497	18115	180.9	159.4	114.3	77.1	88.1
	1984	6.6	7.2	24038	18917	158.7	134.0	109.1	78.7	84.5
Barley									
	1981	1141.3	1347.0	627	1044	715.6	1405.7	118.0	166.4	196.4
	1982	1137.1	1588.6	673	416	765.8	661.0	139.7	61.8	86.3
	1983	1125.1	1520.3	727	686	818.2	1043.3	135.1	94.4	127.5
	1984	1055.0	1289.1	755	235	797.0	303.4	122.2	31.2	38.1
Maize									
	1981	35.5	20.8	2512	2219	89.2	46.2	58.6	88.3	51.8
	1982	36.5	22.0	2483	2247	90.6	49.4	60.2	90.5	54.5
	1983	52.7	19.2	2620	1397	138.1	26.8	36.4	53.3	19.4
	1984	53.3	42.3	2965	1416	158.1	53.7	79.4	47.7	34.0
Sorghum									
	1981	19.9	15.2	1020	1096	20.3	16.7	76.4	107.5	82.1
	1982	13.9	13.4	1018	976	17.2	13.1	79.2	95.9	75.9
	1983	15.9	11.7	1073	969	17.0	11.3	73.6	90.3	66.5
	1984	11.3	16.2	972	470	11.0	7.6	144.0	48.3	69.5

Targets and Achievements in Area, Yield and Production of Major Crops (con't)

Olive										
	1981	247.5	257.8	1199	806	296.7	207.9	104.2	67.3	70.1
	1982	257.7	266.1	1312	1770	338.1	471.0	103.3	134.9	139.3
	1983	264.5	270.6	1199	562	317.1	152.0	102.3	46.9	47.9
	1984	270.5	280.8	1907	1111	515.9	312.0	103.8	58.3	60.5
Grape										
	1981	101.2	100.2	3544	4086	358.7	409.4	99.0	115.3	114.1
	1982	98.8	101.0	4085	4188	403.6	423.0	102.2	102.5	104.8
	1983	100.0	105.8	4462	3675	446.2	388.8	105.8	82.4	87.1
	1984	105.8	105.7	5069	3786	536.3	400.2	99.9	74.7	74.6
Apple										
	1981	23.8	24.9	4130	4165	98.3	103.7	104.6	100.8	105.5
	1982	24.7	25.8	4385	5403	108.3	139.4	104.5	123.2	128.7
	1983	25.3	26.4	4945	4867	125.1	128.5	104.3	98.4	102.7
	1984	26.3	28.6	5791	4535	152.3	129.7	108.7	78.3	85.2

Source: MAAR, Directorate of Agricultural Economics.

ANNEX I
Table 14

LAND AREA BY METHOD OF IRRIGATION

	pump				
	wells	rivers & other	total ('000	gravity hectares)	TOTAL
1975	203.8	208.6	412.4	103.7	516.1
1976	226.6	205.1	431.7	115.0	546.7
1977	216.2	211.1	427.3	103.5	530.8
1978	216.0	200.5	416.5	102.5	519.0
1979	237.5	195.5	433.0	106.4	539.4
1980	237.1	186.6	423.7	115.3	539.0
1981	248.0	207.1	455.1	111.7	566.8
1982	259.4	189.1	448.5	106.2	554.7
1983	266.6	197.7	464.3	115.5	579.8
1984	295.0	205.9	500.9	117.1	618.0
1985	250.3	204.3	454.6	197.3	651.9
gr.rate	0.036	-0.005	0.017	0.010	0.015

Source: Central Bureau of Statistics, Statistical Abstract, various issues.

ANNEX I
Table 15

LAND USE BY COOPERATIVE MEMBERS

	Total Area	Cropped Land rainfed	Cropped Land irrig.	Under Trees rainfed	Under Trees irrig.	No. of members	No. of Coops
	('000 ha)					('000)	
1975	1272	706	208	90	13	209.6	3303
1976	1317	717	204	92	14	247.7	3414
1977	1354	723	224	119	17	267.3	3432
1978	1455	810	225	143	24	277.8	3409
1979	1505	680	216	159	25	304.7	3498
1980	1562	780	225	169	27	325.9	3596
1981	1603	793	216	175	28	347.9	3685
1982	1763	881	214	189	31	376.9	3811
1983	1802	932	217	206	34	407.5	3903
1984	1845	784	238	232	37	440.3	4050
1985	1953	914	266	252	42	466.2	4156

Source: MAAR, The Annual Agricultural Statistical Abstract, various issues.

ANNEX I
Table 16

AREA AND PRODUCTION OF COOPERATIVE MEMBERS

Coops	wheat	barley	lentil	cotton	sugarbeet	peanut	tomato	onion	potato	olive	apple	other tree
Area	('000 hectares)											
1975	275	115	22	60	4	7	9	4	5	47	4	41
1976	398	163	43	61	6	8	14	4	4	67	6	55
1977	393	181	63	61	7	7	12	4	8	76	7	63
1978	400	176	44	52	6	5	13	4	9	79	10	74
1979	434	210	30	54	7	7	12	5	8	88	11	81
1980	440	236	32	49	10	7	17	5	11	90	12	92
1981	408	277	30	51	11	6	20	5	11	94	13	98
1982	426	468	27	59	12	7	19	6	10	101	14	104
1983	450	346	33	63	15	8	21	6	10	109	14	113
1984	393	289	30	74	19	7	23	5	10	128	16	138
1985	433	332	31	70	6	7	27	6	9	134	21	140
gr.rate	0.027	0.113	-0.024	0.017	0.103	0.004	0.099	0.046	0.074	0.090	0.147	0.120
t.test	2.486	5.586	-0.878	1.423	2.889	0.270	8.268	5.528	3.111	10.068	9.288	14.972
Production	('000 ton)											
1975	286	65	16	105	118	11	126	68	69	48	15	94
1976	496	127	38	124	144	15	215	65	52	80	31	208
1977	366	96	36	120	139	12	190	68	91	31	30	220
1978	358	116	27	105	128	10	224	94	135	111	28	212
1979	458	117	16	119	126	13	196	99	131	64	34	219
1980	714	311	32	112	209	12	327	86	165	151	43	279
1981	678	289	26	120	300	11	334	109	139	56	52	307
1982	555	193	24	147	340	13	446	111	166	161	73	350
1983	622	307	28	189	557	14	495	99	183	46	65	396
1984	468	129	18	191	691	14	495	91	194	131	72	393
1985	641	195	22	198	128	14	470	71	160	88	77	484
gr.rate	0.062	0.105	-0.017	0.065	0.132	0.016	0.143	0.029	0.117	0.064	0.159	0.134
t.test	2.786	2.506	-0.580	4.945	2.510	1.374	8.528	1.604	4.951	1.239	8.679	7.318
Yield - - kg/ha												
1975	1,040	565	727	1,750	29,500	1,571	14,000	17,000	13,800	1,021	3,750	2,293
1976	1,246	779	884	2,033	24,000	1,875	15,357	16,250	13,000	1,194	5,167	3,782
1977	931	530	571	1,967	19,857	1,714	15,833	17,000	11,375	408	4,286	3,492
1978	895	659	614	2,019	21,333	2,000	17,231	23,500	15,000	1,405	2,800	2,865
1979	1,055	557	533	2,204	18,000	1,857	16,333	19,800	16,375	727	3,091	2,704
1980	1,623	1,318	1,000	2,286	20,900	1,714	19,235	17,200	15,000	1,678	3,583	3,033
1981	1,662	1,043	867	2,353	27,273	1,833	16,700	21,800	14,455	596	4,000	3,133
1982	1,303	412	889	2,492	28,333	1,857	23,474	18,500	16,600	1,594	5,214	3,365
1983	1,382	887	848	3,000	37,133	1,750	23,571	16,500	18,300	422	4,643	3,504
1984	1,191	446	600	2,581	36,368	2,000	21,522	18,200	19,400	1,023	4,500	2,848
1985	1,415	587	710	2,829	21,333	2,000	17,407	11,833	17,778	657	3,667	3,457

Source: MAAR, The Annual Agricultural Statistical Abstract, various issues.

ANNEX I
Table 17

Production by sectors

	1975				1979				1984			
	Cooperative		Private		Cooperative		Private		Cooperative		Private	
	area	prod'n	area	prod'n	area	prod'n	area	prod'n	area	prod'n	area	prod'n
area: 1000 ha prod'n: 1000 MT												
HYV Wheat	69.0	145.0	189.0	333.0	144.0	267.0	560.0	594.0	164.0	283.0	276.0	453.0
Local Wheat	206.0	141.0	1216.0	931.0	290.0	191.0	595.0	268.0	229.0	184.0	338.0	148.0
Barley	115.0	65.0	896.0	532.0	210.0	117.0	392.0	278.0	289.0	129.0	1000.0	174.0
Maize					10.0	20.0	9.0	14.0	25.0	19.0	34.0	26.0
Lentils	22.0	16.0	76.0	51.0	30.0	16.0	59.0	27.0	30.0	18.0	29.0	18.0
Chickpeas	18.0	8.0	37.2	18.7	8.0	6.0	9.0	5.0	29.0	19.0	24.0	17.0
Cotton	60.0	105.0	148.0	309.0	54.0	119.0	100.0	225.0	73.0	171.0	104.0	260.0
Sugarbeets	4.0	118.0	4.0	69.0	7.0	116.0	11.0	173.0	19.0	691.0	15.0	538.0
Tobacco	6.2	5.5	11.0	6.5	8.5	6.7	9.3	4.9	10.0	9.0	4.0	4.0
Potatoes	5.2	69.3	4.2	55.7	8.0	131.0	6.0	104.0	10.0	194.0	8.0	101.0
Tomatoes	9.0	126.0	18.0	249.0	12.0	196.0	17.0	262.0	23.0	495.0	15.0	232.0
Watermelon	18.9	111.6	53.1	440.4	25.0	177.0	45.0	257.0	31.0	193.0	34.0	98.0
Olives	47.2	49.0	135.8	157.0	88.0	64.0	153.0	132.0	128.2	14.7	152.5	16.3
Apples	3.7	14.0	12.7	42.6	11.0	34.0	11.0	42.0	16.2	49.0	12.4	3.6
Grapes	3.1	6.5	17.3	36.2	40.0	116.0	56.0	171.0	56.7	41.4	48.3	36.5
Citrus	0.8	5.0	2.4	15.1	2.4	19.8	3.9	36.5	4.8	16.0	4.3	1.9
Pistashio	2.6	1.1	6.7	7.4	4.9	6.4	11.8	3.8	11.6	2.3	19.1	3.5
Almonds	1.3	2.8	3.6	4.4	8.3	4.8	4.4	6.2	1.0	334.0	0.7	275.0
Vetch/sern	17.3	10.0	39.7	27.0	27.4	16.1	27.6	15.7	10.0	15.0	4.0	4.0

Source: MAAR, The Annual Agricultural Statistical Abstract, various issues

ANNEX I
Table 18

Area and Production of State Farms

	Cereals		Fruit trees		Dairy	milk
	area ('ooo ha)	product. ('ooo t)	area (ha)	product. (T)	Animals (no)	product.
1975	64.1	46.4	437	1932	4602	7,655
1976	36.7	24.3	500	2382	4602	7,655
1977	38.9	19.2	648	2671	6432	8,437
1978	22.0	23.1	1049	4017	6639	9,560
19.	19.3	12.3	404	3669	7013	10,103
1980	22.4	24.8	750	5432	7097	11,838
1981	6.5	11.1	962	3489	7183	12,902
1982	17.4	22.7	462	3575	7420	12,969
1983	9.5	7.8	612	2815	3526	13,481
1984	16.4	8.6	729	436	6748	13,843
1985	16.4	8.6	729	436	6810	13,295
gr.rate	-0.134	-0.131	0.029	-0.122	0.018	0.069

Source: Central Bureau of Statistics, Statistical Abstract, various issues.

ANNEX I
Table 19

Wheat

	high yielding varieties					
	Total		non-irrigated		irrigated	
	area ('000 ha)	prod'n ('000 t)	area ('000 ha)	prod'n ('000 t)	area ('000 ha)	prod'n ('000 t)
1975	269.7	478.3	150.3	223.7	119.4	254.6
1976	340.8	703.7	182.1	314.3	158.6	389.4
1977	362.8	559.9	220.0	278.8	142.8	281.1
1978	518.4	852.7	372.3	521.1	146.2	331.6
1979	559.9	861.3	419.3	514.5	140.6	346.8
1980	641.6	1280.4	500.3	873.7	141.3	406.7
1981	574.1	1298.2	447.3	922.6	126.7	375.6
1982	601.6	960.4	476.5	624.5	125.1	335.9
1983	601.5	918.9	453.9	548.6	147.6	370.4
19E	540.0	737.0	375.0	355.0	165.0	382.0
1985						
	local varieties					
1975	1422.6	1071.8	1367.6	964.6	55.0	107.1
1976	1249.5	1086.4	1215.8	1032.2	33.7	54.1
1977	1164.9	657.3	1129.2	604.2	35.6	53.0
1978	1036.9	797.9	1003.8	738.6	34.0	59.4
1979	885.1	458.6	856.1	400.6	29.0	58.0
1980	807.5	957.9	774.4	884.8	33.0	73.1
1981	680.9	788.8	638.1	686.5	42.9	102.3
1982	620.7	595.8	587.3	531.8	33.4	64.0
1983	688.8	693.1	666.5	644.5	22.3	48.5
1984	567.0	331.0	547.0	284.0	20.0	47.0
1985						

	HYV as % of all wheat areas		
	total	non-irrig	irrig.
1975	16	10	68
1976	21	13	82
1977	24	16	80
1978	33	27	81
1979	39	33	83
1980	44	39	81
1981	46	41	75
1982	49	45	79
1983	47	41	87
1984	49	41	89
1985			

Source: MAAR, The Annual Agricultural Statistical Abstract, various issues

ANNEX I
Table 20

PRODUCTION BY IRRIGATION/NON-IRRIGATION

	1975				1979				1984			
	Irrigated		non-irrigated		Irrigated		non-irrigated		Irrigated		non-irrigated	
	area	prod'n	area	prod'n	area	prod'n	area	prod'n	area	prod'n	area	prod'n
area: 1000 ha prod'n: 1000 MT												
HYV Wheat	119.4	254.6	150.3	223.7	140.6	346.8	419.3	514.5	165.0	382.0	375.0	355.0
Local Wheat	55.0	107.1	1367.6	964.6	29.0	58.0	856.1	400.6	20.0	47.0	547.0	284.0
Barley	13.9	22.8	997.5	573.7	14.0	18.9	1088.2	375.8	15	23	1274	281
Maize	13.1	14.3	2.8	2.4	15.9	31.9	2.5	1.9	42.5	59.7	1.3	0.5
Lentils	2.6	3.1	95.2	63.5	1.9	1.8	86.7	41.1	1	1	58	35
Chickpeas	0.6	0.7	54.6	26.0	0.1	0.1	17.1	10.5	0	0	53	36
Cotton	185.1	405.8	23.0	8.5	150.8	342.6	3.9	1.3	176.4	450.6	0	0
Sugarbeets	6.6	157.1	1.5	30.2	17.1	264.6	1.3	24.2	34	1229	0	0
Tobacco	0.2	0.3	17.0	11.7	1.7	3.3	11.4	8.3	4	6.6	10	6.8
potato	7.8	107.7	1.6	17.3	12.6	215.8	1.7	19.3	17	300.5	1.3	21.1
Tomatoes	16.6	332.6	10.2	42.8	20.5	420.2	8.1	37.6	27	667	11	51.4
Watermelon	2.8	53.1	69.3	498.4	5.5	114.3	64.2	319.2	5.1	86	59.6	205
Olives	4.9	9.6	178.2	147.2	4.9	7.5	236.3	188.4	6.6	19.9	274.1	291
Apples	8.5	39.4	7.9	17.1	10.3	55.7	11.8	33.2	12.2	89.4	16.4	40.3
Grapes	5.1	32.0	76.2	249.0	5.5	45.6	90.6	309.8	7.8	59.9	98.1	340.3
Citrus	3.2	20.1			6.3	56.3			9.2	89.8	0	0
Pistashio /a	79.0	47.0	4246.0	8483.0	184.0	46.0	16485.0	5107.0	500	200	30200	10600
Almonds /a	176.0	472.0	4676.0	6718.0	306.0	550.0	12419.0	10481.0	1700	16100	-	-

/a = in tons

Source: MAAR, The Annual Agricultural Statistical Abstract, various issues

Annex I
TAble 21

INCOME STATEMENTS FY78-84
(LS million)

INCOME	FY78	FY79	FY80	FY81	FY82	FY83	FY84
Interest on Loans							
Interest Due & Collected	19.2	22.8	n/a	n/a	n/a	43.6	49.2
Overdue Interest	2.6	2.4	n/a	n/a	n/a	1.4	3.0
Total Interest on Loans	21.8	25.2	n/a	n/a	n/a	45.0	52.2
Interest on Current Acc	0.0	0.3	n/a	n/a	n/a	0.2	0.1
Total Interest Earned	21.8	25.5	n/a	n/a	n/a	45.2	52.3
Commissions Collected	0.7	1.1	n/a	n/a	n/a	4.0	4.0
Various Revenues	0.3	1.1	n/a	n/a	n/a	1.1	8.7
Late Charges (Penalty Int)	1.1	1.1	n/a	n/a	n/a	2.1	2.6
Profit on Commercial Trans	22.7	31.3	n/a	n/a	n/a	53.9	50.3
TOTAL INCOME	46.6	60.1	n/a	n/a	n/a	106.2	117.8

INCOME STATEMENTS FY78-84 (CONT)
(LS million)

	FY78	FY 79	FY80	FY81	FY82	FY83	FY84
EXPENSES							
Administrative & Gen Expen							
Salaries And Wages	8.4	9.0	n/a	n/a	n/a	19.8	21.3
Salary Suplement	1.1	1.6	n/a	n/a	n/a	4.5	5.4
Transportation Expen	0.5	0.6	n/a	n/a	n/a	0.7	0.8
Social Benefits	1.6	1.7	n/a	n/a	n/a	4.0	4.5
Rent	0.4	0.2	n/a	n/a	n/a	1.3	2.2
Fees & Stationary	0.0	0.8	n/a	n/a	n/a	0.7	0.9
Repairs & Maintenance	0.6	0.6	n/a	n/a	n/a	1.2	1.4
Financial Costs	0.0	0.0	n/a	n/a	n/a	4.1	4.5
Miscelaneous Expenses	0.3	0.1	n/a	n/a	n/a	1.1	2.4
Total Administ Expen	13.0	14.5	n/a	n/a	n/a	37.3	43.4
Investment Expenses							
Interes Paid-Current Acc		5.0	n/a	n/a	n/a	9.9	11.0
Discounts		3.9	n/a	n/a	n/a	7.8	9.3
Overdrafts		0.0	n/a	n/a	n/a	0.3	0.7
Total Interest Payed	6.9	8.9	n/a	n/a	n/a	17.9	20.9
Commissions Payed	0.1	0.1	n/a	n/a	n/a	0.7	0.8
Provision	0.0	3.0	n/a	n/a	n/a	40.3	40.7
Depreciation	0.4	0.5	n/a	n/a	n/a	0.8	2.6
Varios Losses	0.2	0.0	n/a	n/a	n/a	0.0	0.0
Total Investment Expen	7.6	12.6	n/a	n/a	n/a	59.7	64.9
TOTAL EXPENDITURES	20.6	27.1	n/a	n/a	n/a	97.0	108.2
NET PROFITS	26	33.0	n/a	n/a	n/a	9.2	9.5

Source: Cooperative Agricultural Bank (CAB)

Performance of Loan Portfolio, FY80-84
(LS million)

Annual Loans	FY80 Target	FY80 Act	FY80 %	FY81 Target	FY81 Act	FY81 %	FY82 Target	FY82 Act	FY82 %	FY83 Target	FY83 Act	FY83 %	FY84 Target	FY84 Act	FY84 %
TOTAL	850	927	109	975	1,097	113	1,075	1,309	122	1,400	1,600	114	1,850	1,987	107
By Sectors															
Public	42	30	72	45	42	93	60	57	95	120	55	46	137	8	6
Cooperative	400	393	98	450	488	108	505	598	118	680	760	112	910	1,008	111
Private	408	504	124	480	568	118	510	654	128	600	786	131	803	971	121
By Term															
Short	468	486	104	485	554	114	540	687	127	675	813	120	850	915	108
Medium	289	350	121	390	419	110	400	473	118	529	566	107	730	695	95
Long	93	91	98	110	124	113	135	149	110	196	221	113	270	377	140

Note: Data refer to loans outstanding at begining of period plus those sanctioned during the year.

Source: Cooperative Agricultural Bank (CAB)

COOPERATIVE AGRICULTURAL BANK LOANS BY COMMODITY FINANCED
(LS Million)

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	Ann. Growth
Cotton	122.5	100.1	101.3	97.9	128.1	118.5	150.9	204.2	271.8	298.3	13%
Cereals	22.8	33.9	54.6	61.8	90.9	101.3	106.4	149.8	164.0	206.9	26%
Sugarbeet	4.7	5.6	8.3	8.9	12.1	15.1	28.3	34.4	29.3	0.0	-44%
Potato	6.0	5.6	13.4	15.3	13.1	17.6	17.5	21.0	18.0	25.3	16%
Olives	3.2	4.9	7.5	0.0	9.6	5.6	14.2	14.6	11.6	0.0	-32%
Fruit Trees	10.1	6.1	7.1	8.2	23.0	0.3	45.3	47.2	48.5	202.0	37%
Forage	4.7	4.3	9.6	1.8	19.6	20.5	27.5	36.1	42.7	58.4	38%
Other Crops	9.1	6.8	10.5	8.2	9.3	17.5	13.2	15.8	55.9	12.1	14%
Livestock	8.6	18.8	18.6	36.0	15.4	17.1	34.3	24.0	39.9	5.9	2%
Land Improve.	2.8	13.6	15.6	20.4	30.6	53.5	51.0	38.8	67.9	48.2	31%
Mach. & Eq.	58.4	67.8	38.5	59.5	57.5	65.5	84.3	93.5	113.2	183.4	13%
Other	9.1	6.6	11.8	19.7	17.4	14.2	12.3	23.4	13.7	66.9	16%
TOTAL	262.0	274.1	296.8	337.7	426.6	446.7	585.2	702.8	876.5	1107.4	16%

Note: Livestock includes beef, sheep, poultry, dairy, and milk development
Others include chemicals, construction, fisheries, green houses, silk worms, and behives

Source: MAAR, The Annual Agricultural Statistical Abstract, various issues.

ANNEX I
Table 24

AREA, YIELD, AND PRODUCTION OF CEREALS AND LEGUMES, by year

AREA	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	growth rate
Cereals ('000 ha)												
wheat	1692.0	1590.0	1528.0	1555.0	1445.1	1449.1	1255.0	1222.3	1290.4	1107.1	1265.0	-0.0158
barley	1011.0	1172.0	1021.0	1033.0	1102.2	1210.2	1347.0	1588.6	1520.3	1289.1	1385.9	0.0168
oats	2.9	2.2	1.8	1.7	2.2	1.0	1.7	1.2	1.3	2.0	1.0	-0.0297
maize	15.8	23.4	26.2	26.6	18.4	23.4	20.8	22.1	19.2	42.3	46.6	0.0264
millet	22.7	19.6	24.9	18.6	13.6	16.0	15.2	13.4	11.7	16.2	10.0	-0.0298
rice	1.0	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	-	
Legumes												
lentils	98.0	147.0	178.0	136.0	89.0	84.8	71.7	57.6	71.5	59.5	66.1	-0.0397
chick pea	55.0	68.0	41.0	46.0	17.0	91.4	85.2	56.2	94.2	53.2	79.3	0.0214
broad beans	6.0	8.0	8.0	8.0	8.0	7.3	7.7	7.7	6.8	7.2	5.8	-0.0047
haricot beans	4.0	6.0	6.0	6.0	3.0	7.0	6.1	6.1	6.2	5.9	6.9	0.0139
peas	1.0	1.0	1.0	1.0	1.0	0.8	0.8	0.6	0.6	0.9	1.3	-0.0074
kidney beans	1.0	1.0	1.0	2.0	0.0	1.1	1.1	0.6	0.7	0.0	-	
rambling vetch	31.0	40.0	39.0	41.0	28.0	33.3	32.0	24.3	32.5	27.1	29.2	-0.0130
flowering sern	5.0	18.0	17.0	12.0	9.0	9.0	8.2	6.7	9.0	6.5	8.1	-0.0189
bitter vetch	21.0	25.0	27.0	25.0	16.0	20.8	16.1	11.4	18.2	12.0	17.4	-0.0258
PRODUCTION												
Cereals ('000 ton)												
wheat	1550.0	1790.0	1217.0	1651.0	1320.0	2225.8	2087.0	1556.2	1612.0	1067.6	1714.0	-0.0015
barley	597.0	1059.0	337.0	729.0	394.7	1587.7	1405.7	661.0	1043.3	303.5	740.2	0.0021
oats	2.6	1.8	1.6	1.5	1.9	1.6	1.4	1.1	1.1	1.7	1.0	-0.0275
maize	26.8	50.9	38.7	56.2	33.7	48.1	46.2	49.5	26.8	59.9	78.8	0.0149
millet	14.5	15.6	23.7	17.3	11.5	18.8	16.7	13.1	11.3	10.4	7.4	-0.0288
rice	5.2	1.1	0.2	0.1		0.1				0.0	-	
Legumes												
lentils	67.6	136.0	117.0	92.0	43.0	82.8	61.5	52.6	60.9	33.6	48.0	-0.0378
chick pea	27.0	51.0	25.0	31.0	10.6	73.4	63.8	37.0	74.8	33.8	50.4	0.0286
broad beans	9.0	14.0	13.0	13.0	13.5	13.5	13.5	14.2	12.8	12.1	7.8	-0.0046
haricot beans	7.0	10.0	11.0	10.0	6.5	12.3	10.5	11.5	12.4	10.2	12.3	0.0160
peas	1.0	1.0	1.0	1.0	0.8	0.9	0.7	0.6	0.6	1.0	1.2	-0.0070
kidney beans	1.0	1.0	1.0	2.0	0.7	1.5	1.5	0.8	0.8	0.0	-	
rambling vetch	21.0	33.0	30.0	29.0	18.1	32.0	21.5	17.5	27.2	19.0	18.1	-0.0160
flowering sern	6.0	15.0	13.0	8.0	6.8	9.0	7.8	6.5	9.9	6.8	7.2	-0.0131
bitter vetch	9.0	15.0	16.0	14.0	7.1	13.9	11.5	6.8	11.5	6.5	8.6	-0.4564
	1	2	3	4	5	6	7	8	9	10	11	
Cereals (kg/ha)												
wheat	916	1126	796	1062	913	1536	1663	1273	1249	964	1355	0.0145
barley	591	904	330	706	358	1312	1044	416	686	235	534	-0.0144
oats	897	818	889	882	864	887	824	917	846	850	1000	0.0023
maize	1696	2175	2240	2113	1832	2056	2221	2240	1396	1416	1691	-0.0112
millet	639	796	952	930	846	1175	1099	978	966	642	740	0.0011
rice	5200	3667	2000	1000								
Legumes												
lentils	684	925	657	676	483	976	858	913	852	598	726	0.0020
chick pea	491	750	610	674	624	803	749	658	794	673	636	0.0071
broad beans	1500	1750	1625	1625	1688	1849	1753	1844	1882	1681	1345	0.0001
haricot beans	1750	1667	1833	1667	2167	1757	1721	1885	2000	1729	1783	0.0020
peas	1000	1000	1000	1000	800	1125	875	1000	1000	1111	923	0.0004
kidney beans	1000	1000	1000	1000		1364	1364	1333	1143			
rambling vetch	677	825	769	707	646	961	672	720	837	701	620	-0.0030
flowering sern	1200	833	765	667	756	1000	951	970	1100	1046	889	0.0059
bitter vetch	429	600	593	560	444	668	714	596	632	542	494	0.0043

Source: MAAR, The Annual Agricultural Statistical Abstract, various issues.

ANNEX I
Table 25

AREA, YIELD, PRODUCTION OF INDUSTRIAL CROPS, by year

	cotton	sugar beets	tobacco	peanut	sesame	sunflower
Area			('ooo hectares)			
1975	208.0	8.0	17.0	13.0	31.0	3.0
1976	182.0	9.0	18.0	13.0	43.0	4.0
1977	187.0	12.0	15.0	11.0	39.0	5.0
1978	169.0	14.0	16.0	8.0	36.0	6.0
1979	154.8	18.3	13.2	10.2	25.6	6.3
1980	140.9	22.0	13.5	10.9	46.4	7.6
1981	143.4	22.1	12.9	8.9	36.8	6.6
1982	158.8	28.9	13.9	9.7	26.7	3.9
1983	175.7	29.6	14.2	10.4	33.6	3.2
1984	178.5	35.7	13.6	9.6	24.2	6.8
1985	170.2	14.5	12.5	9.3	42.4	6.3
gr.rate	-0.013	0.124	-0.028	-0.025	-0.013	0.034
Production			('ooo tons)			
1975	414.0	187.0	12.0	21.0	14.0	4.0
1976	409.0	242.0	12.0	24.0	19.0	3.0
1977	395.0	273.0	12.0	20.0	18.0	7.0
1978	377.0	210.0	13.0	15.0	19.0	10.0
1979	343.9	288.8	11.6	18.2	14.2	11.1
1980	325.1	503.9	13.8	19.4	24.8	13.3
1981	355.9	564.0	12.5	17.3	18.3	8.9
1982	422.2	860.3	13.7	19.6	16.4	6.4
1983	526.5	1157.7	14.4	20.4	15.0	6.4
1984	450.6	1268.2	13.3	19.6	6.4	6.1
1985	486.9	412.2	13.9	19.4	12.0	9.2
gr.rate	0.021	0.182	0.017	-0.006	-0.051	0.052
yield			kg/ha			
1975	1990	23375	706	1615	452	1333
1976	2247	26889	667	1846	442	750
1977	2112	22750	800	1818	462	1400
1978	2231	15000	813	1875	528	1667
1979	2222	15781	879	1784	555	1762
1980	2307	22905	1022	1780	534	1750
1981	2482	25520	969	1944	497	1348
1982	2659	29768	986	2021	614	1641
1983	2997	39111	1014	1962	446	2000
1984	2524	35524	978	2042	264	897
1985	2861	28428	1112	2086	283	1460
gr.rate	0.035	0.052	0.047	0.020	-0.038	0.018

Source: MAAR, The Annual Agricultural Statistical Abstract, various issues.

ANNEX I
Table 26

Tree Crops

Area	olives	grapes	apricots	apples	figs	citrus	pistashio	almonds
				('000 ha.)				
1975	183.0	81.0	11.0	16.0	20.0	4.0	9.0	4.8
1976	219.0	95.0	11.0	18.0	22.0	4.0	11.0	6.8
1977	228.0	94.0	12.0	19.0	21.0	6.0	13.0	7.5
1978	234.0	94.0	12.0	21.0	21.0	6.0	16.0	7.5
1979	241.3	96.1	12.3	22.1	19.7	6.3	16.7	12.7
1980	249.3	99.5	12.9	23.9	18.8	7.6	18.7	19.3
1981	258.0	100.2	13.2	24.9	18.9	7.9	21.7	20.9
1982	266.1	100.9	13.4	25.7	18.9	8.9	23.9	19.4
1983	270.6	105.8	12.8	26.4	18.8	9.3	24.9	19.4
1984	280.7	105.9	13.7	28.6	16.9	10.9	30.6	19.6
1985	295.7	109.9	14.4	32.5	16.6	12.4	37.4	22.0
Tree/Vine				Total thousands				
1975	20,893	65,955	2,568	5,197	4,326	1,636	2,008	1,493
1976	23,856	73,447	2,640	5,700	4,645	1,710	2,218	2,191
1977	24,846	72,775	2,850	5,878	4,500	1,719	2,690	2,428
1978	24,881	72,779	2,821	6,528	4,198	1,996	3,149	2,439
1979	25,857	72,890	2,859	6,883	4,022	2,305	3,181	4,594
1980	26,643	74,604	2,927	7,238	3,874	2,705	3,619	7,244
1981	27,534	75,081	3,033	7,537	3,893	2,784	4,262	7,717
1982	29,220	75,825	3,139	7,852	4,007	3,200	4,745	7,156
1983	30,277	77,023	3,104	7,807	4,023	3,596	4,868	7,253
1984	31,030	77,987	3,299	8,511	3,745	4,119	5,811	7,327
1985	32,204	83,175	3,501	9,713	3,656	4,665	6,963	8,018
gr.rate	0.039	0.015	0.027	0.056	-0.019	0.116	0.135	0.191
Tree/Vine				Bearing thousands				
1975	15,646	55,862	1,974	713	3,686	976	813	839
1976	18,200	59,187	1,994	776	3,624	960	675	1,154
1977	18,268	59,983	2,140	822	3,654	1,013	886	1,394
1978	18,466	59,972	2,081	865	3,397	1,174	905	1,503
1979	19,282	55,435	2,117	3,543	3,374	1,356	719	1,125
1980	20,200	57,781	2,151	3,742	3,245	1,557	914	1,329
1981	20,763	59,078	2,269	4,077	3,271	1,725	941	1,457
1982	22,033	59,153	2,360	4,089	3,229	1,842	1,007	2,236
1983	22,984	60,045	2,351	4,595	3,291	2,036	1,143	2,563
1984	23,805	60,324	2,393	4,736	3,004	2,229	1,274	2,800
1985	24,576	59,024	2,444	4,758	3,024	2,318	1,449	3,977
Production				thousand tons				
1975	157.0	281.0	53.0	57.0	36.0	28.0	9.0	7.2
1976	233.0	319.0	46.0	71.0	41.0	38.0	4.0	7.3
1977	175.0	353.0	32.0	61.0	45.0	43.0	5.0	15.5
1978	305.0	346.0	47.0	67.0	36.0	41.0	7.0	11.8
1979	196.0	286.9	46.1	76.3	40.8	56.2	5.2	11.0
1980	392.0	356.2	48.5	89.3	46.7	65.1	7.8	10.7
1981	207.9	409.4	48.8	103.7	54.9	72.3	9.2	8.2
1982	471.0	422.8	81.4	139.3	50.8	81.6	8.0	8.7
1983	152.0	388.8	78.6	128.5	51.7	91.5	9.2	27.2
1984	310.6	400.2	51.8	129.7	41.0	105.9	10.8	29.1
1985	185.0	486.4	80.5	125.1	34.9	83.5	12.0	33.8
gr.rate	0.023	0.568	0.410	0.531	0.305	0.546	0.262	0.408
Yield/bearing tree				kg				
1975	10	5	27	80	10	29	11	9
1976	13	5	23	91	11	40	6	6
1977	10	6	15	74	12	42	6	11
1978	17	6	23	77	11	35	8	8
1979	10	5	22	22	12	41	7	10
1980	19	6	23	24	14	42	9	8
1981	10	7	22	25	17	42	10	6
1982	21	7	34	34	16	44	8	4
1983	7	6	33	28	16	45	8	11
1984	13	7	22	27	14	48	8	10
1985	8	8	33	26	12	36	8	8
gr.rate	-0.018	0.040	0.037	-0.126	0.032	0.023	0.013	-0.001

Source: MAAR, The Annual Agricultural Statistical Abstract, various issues.

ANNEX I
Table 27

Vegetables

	potato	tomato	onion	cucumber	melon	watermelon
Area			('ooo hectares)			
1975	10.0	27.0	8.0	13.0	18.0	72.0
1976	10.0	32.0	7.0	18.0	26.0	80.0
1977	13.0	33.0	9.0	19.0	26.0	88.0
1978	15.0	31.0	8.0	19.0	29.0	86.0
1979	14.3	28.6	8.4	16.7	29.9	69.7
1980	18.9	34.6	8.8	25.0	23.4	100.4
1981	22.2	40.2	8.9	23.4	28.5	102.6
1982	16.8	36.5	9.5	24.5	29.1	101.3
1983	20.0	40.5	8.8	26.4	26.3	95.2
1984	18.4	37.8	7.2	19.9	22.1	65.0
1985	18.0	40.2	7.3	25.2	35.7	95.0
% gr rate	0.069	0.036	-0.000	0.052	0.025	0.014
Production			('ooo tons)			
1975	125.0	375.0	133.0	183.0	223.0	552.0
1976	126.0	517.0	100.0	183.0	177.0	557.0
1977	164.0	454.0	162.0	178.0	201.0	717.0
1978	199.0	502.0	160.0	192.0	212.0	616.0
1979	235.1	457.9	161.4	175.0	231.8	433.5
1980	292.2	643.7	151.1	274.3	205.3	906.1
1981	310.7	723.0	175.4	271.9	344.8	968.9
1982	279.4	790.3	187.2	282.2	284.6	868.6
1983	315.1	830.7	159.4	350.3	228.3	678.2
1984	321.6	727.3	136.2	236.1	121.9	285.5
1985	280.4	778.5	143.3	295.2	179.7	684.1
% gr rate	0.102	0.077	0.018	0.062	-0.011	-0.003
Yield			kg/ha			
1975	12500	13889	16625	14077	12389	7667
1976	12600	16156	14286	10167	6808	6963
1977	12615	13758	18000	9368	7731	8148
1978	13267	16194	20000	10105	7310	7163
1979	16441	16010	19214	10479	7753	6220
1980	15460	18604	17170	10972	8774	9025
1981	13995	17985	19708	11620	12098	9443
1982	16631	21652	19705	11518	9780	8575
1983	15755	20511	18114	13269	8681	7124
1984	17478	19241	18917	11864	5516	4392
1985	15578	19366	19630	11714	5034	7201
% gr rate	0.031	0.039	0.018	0.010	-0.035	-0.016

Source: MAAR, The Annual Agricultural Statistical Abstract, various issues.

ANNEX I
Table 28

LIVESTOCK NUMBERS

	Chickens	sheep	dairy cows	calves	oxen	goats	donkeys
	million		thousand				
1974	5.4						
1975	8.6	5.8	370	144	43	814	233
1976	5.9	6.5	382	158	34	956	234
1977	6.6	7.1	419	185	35	1010	235
1978	12.6	7.2	462	194	38	1065	236
1979	16.1	8.1	514	209	37	999	238
1980	13.8	9.3	522	209	37	1025	242
1981	14.0	10.5	532	237	38	1060	241
1982	15.4	11.4	536	226	29	1150	236
1983	14.6	13.4	512	230	25	1157	218
1984	15.1	12.7	501	213	22	1060	192
1985	12.9	11.0	523	198	21	1059	196
gr.rate	0.113	0.291	0.578	0.491	0.159	0.634	0.403

Source: Central Bureau of Statistic, Statistical Abstract, various issues

ANNEX I
Table 29

ANIMAL PRODUCT OUTPUT

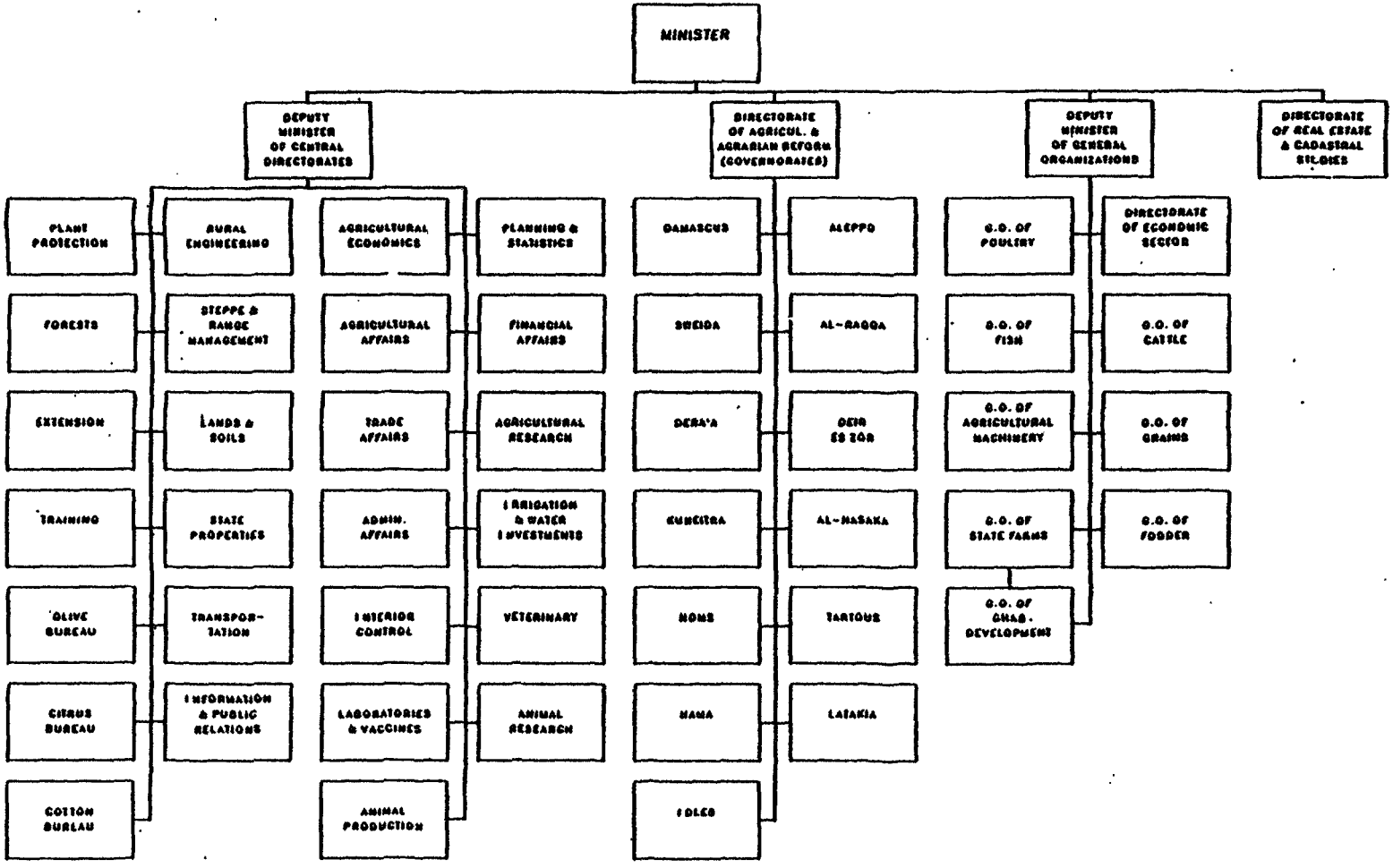
	eggs (consume) (million)	poultry meat	Milk and milk products					wool	hair (ton)	honey (ton)	sheep slaughter (mil)
			butter	cheese	ghee	fr. milk	Tot. milk				
			thousand tons								
1975	656.0	11.7	1.3	29.9	8.9	200.0	567.0	6.2	481.0	279.0	1.0
1976	700.0	13.8	1.0	34.6	9.2	245.0	665.0	6.6	459.0	380.0	1.2
1977	707.0	17.0	0.8	30.2	7.6	253.0	647.0	6.8	467.0	350.0	1.3
1978	997.0	25.2	1.6	33.3	9.0	319.0	792.0	8.4	851.0	394.0	1.2
1979	1183.0	29.0	1.4	45.2	9.9	303.0	839.0	8.9	382.0	359.0	1.2
1980	1234.0	40.7	1.6	52.3	14.2	354.0	907.0	9.7	478.0	688.0	1.1
1981	1420.0	67.0	2.4	57.0	13.2	386.0	1097.0	11.6	494.0	501.0	1.3
1982	1393.0	71.9	2.2	60.6	19.9	383.0	1132.0	12.8	636.0	623.0	1.3
1983	1619.0	75.0	1.8	61.0	15.7	398.0	1161.0	13.9	605.0	695.0	1.6
1984	1619.0	81.0	1.9	46.5	9.7	401.0	1003.0	12.6	552.0	683.0	1.8
1985	1413.0	79.8	2.0	54.4	12.0	440.0	1116.0	12.2	663.0	515.0	1.5
gr.rate	0.103	0.245	0.079	0.073	0.054	0.074	0.073	0.087	0.026	0.082	0.041

Source: Central Bureau of Statistics, Statistical Abstract, various isssues.

PARASTATAL ORGANIZATION AND COMMODITY LIST

Organization	Commodities Handled
General Organization for Cotton Ginning & Marketing	- export cotton lint
General Organization for Tobacco	- export/import tobacco
General Organization for Cereal Processing & Trade	- export chickpeas - export lentils - export barley - import wheat/wheat flour
General Organization for Fodder	- import barley & corn - import livestock feed ingredients (SBOM, etc.)
General Organization for Sugar	- import sugar
Foreign Trade Organization for Chemicals & Foodstuff	- import rice - import cottonseed, soybean & olive oils - import agricultural chemicals & livestock pharmaceuticals
General Company for Fruits & Vegetables	- import citrus, bananas, apples & potatoes - export potatoes & onions
General Company for Meat	- import frozen meat & livestock - export live animals

SYRIA – MINISTRY OF AGRICULTURE & AGRARIAN REFORM
ORGANAGRAM



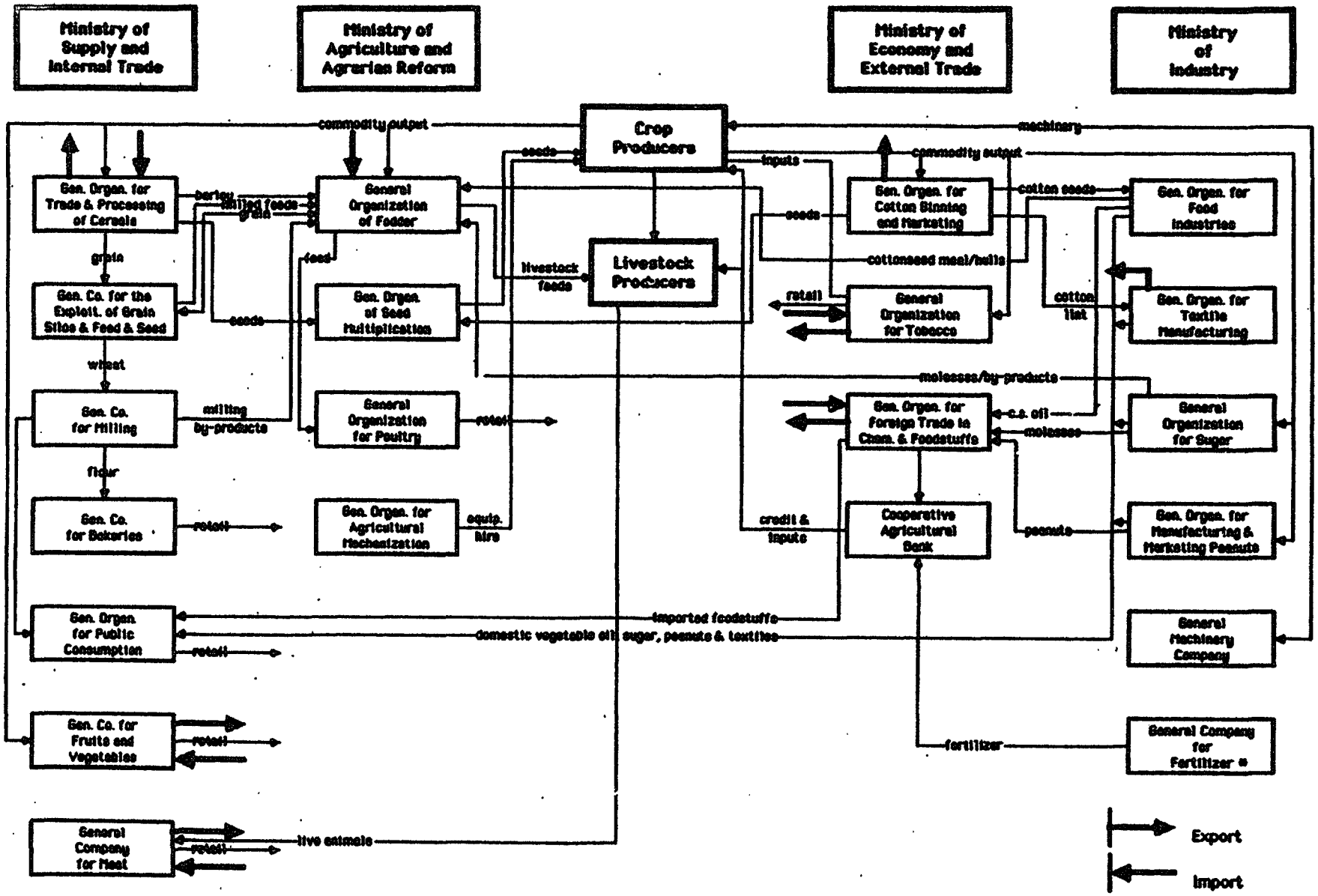
FEBRUARY 1985.

WORLD BANK 30359

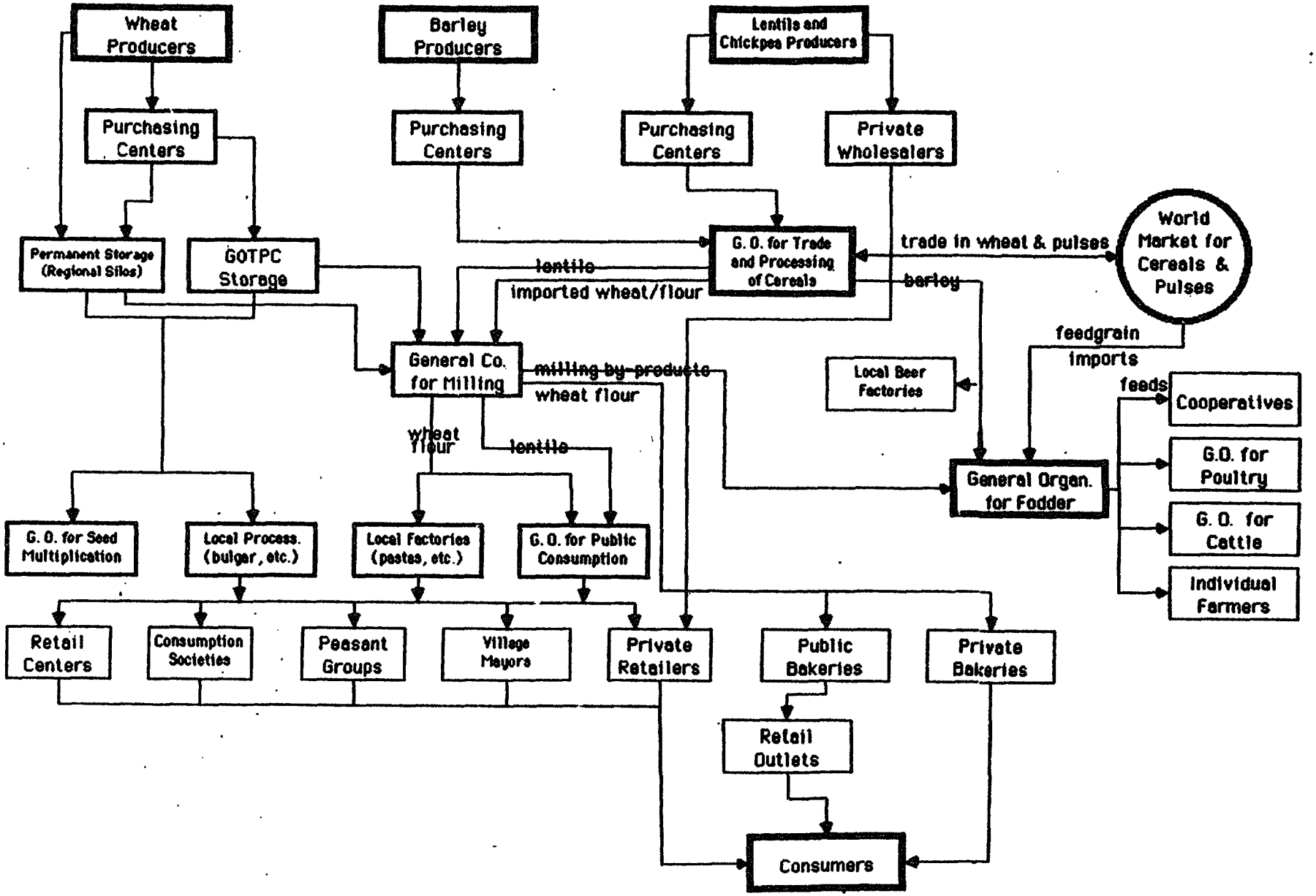
ANNEX I
Figure 1

ANNEX I
Figure 2

SYRIA
Public Sector Agricultural Marketing Institutions and Channels



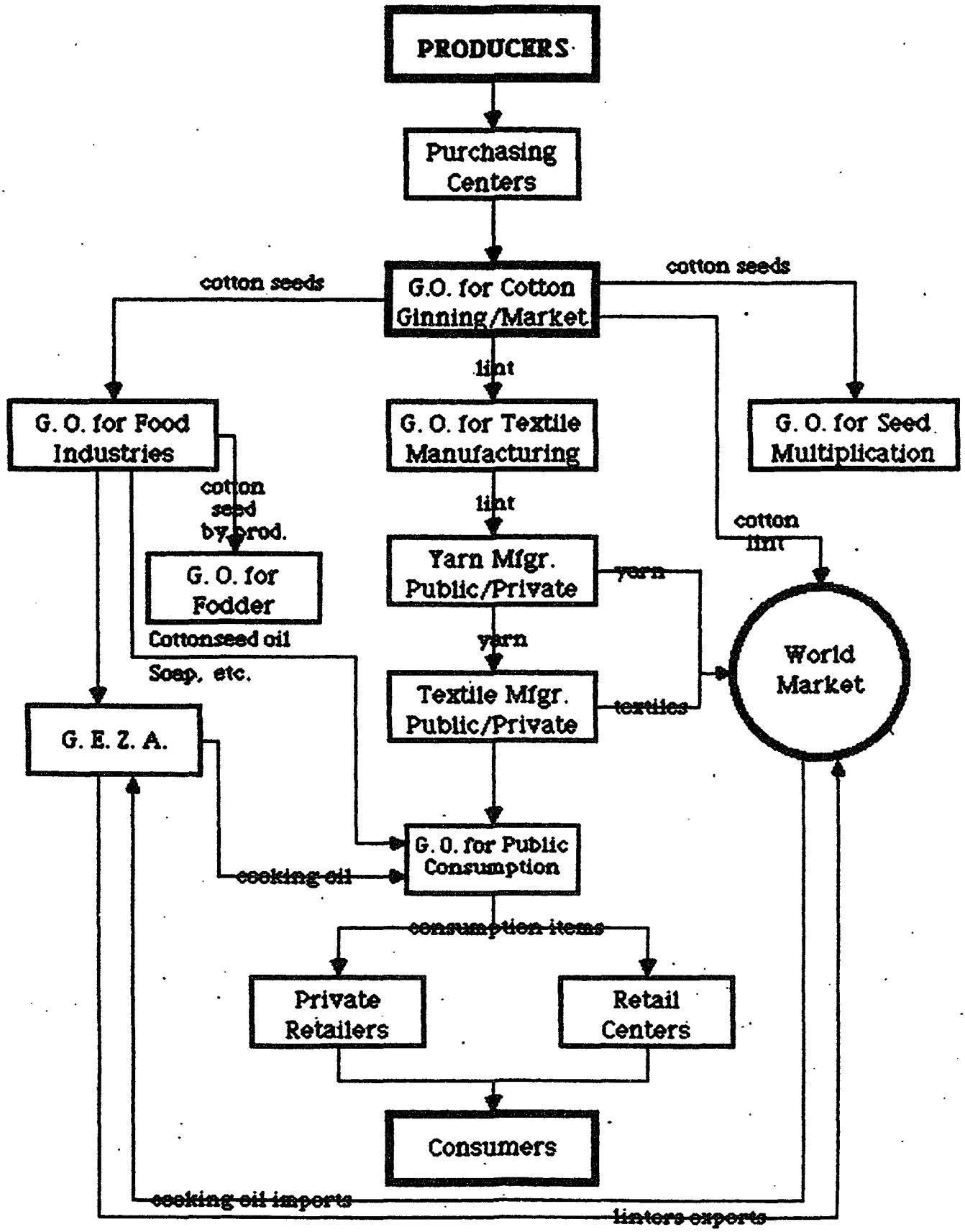
MARKETING AND TRADE OF CEREALS AND PULSES



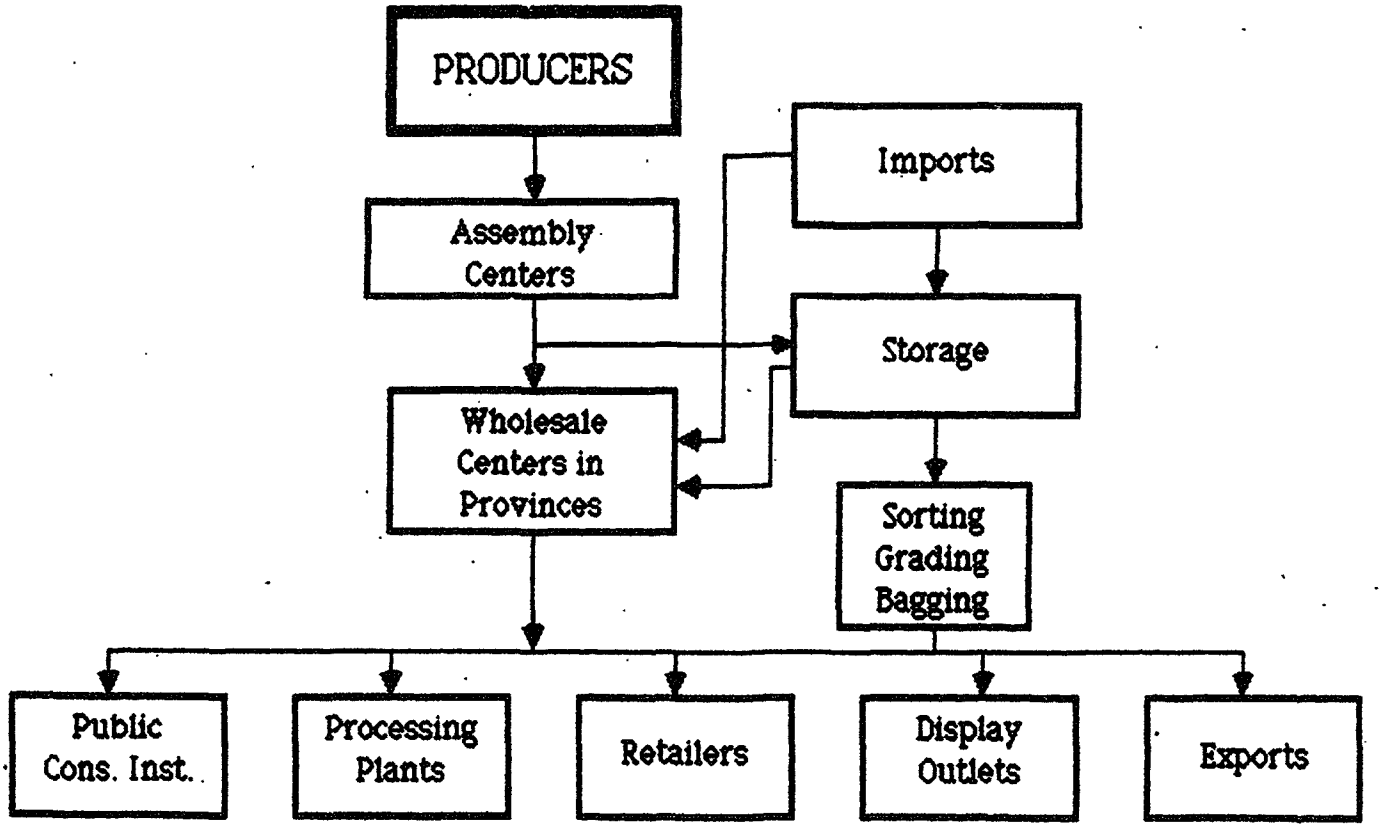
ANNEX I
Figure 3

ANNEX I
Figure 4

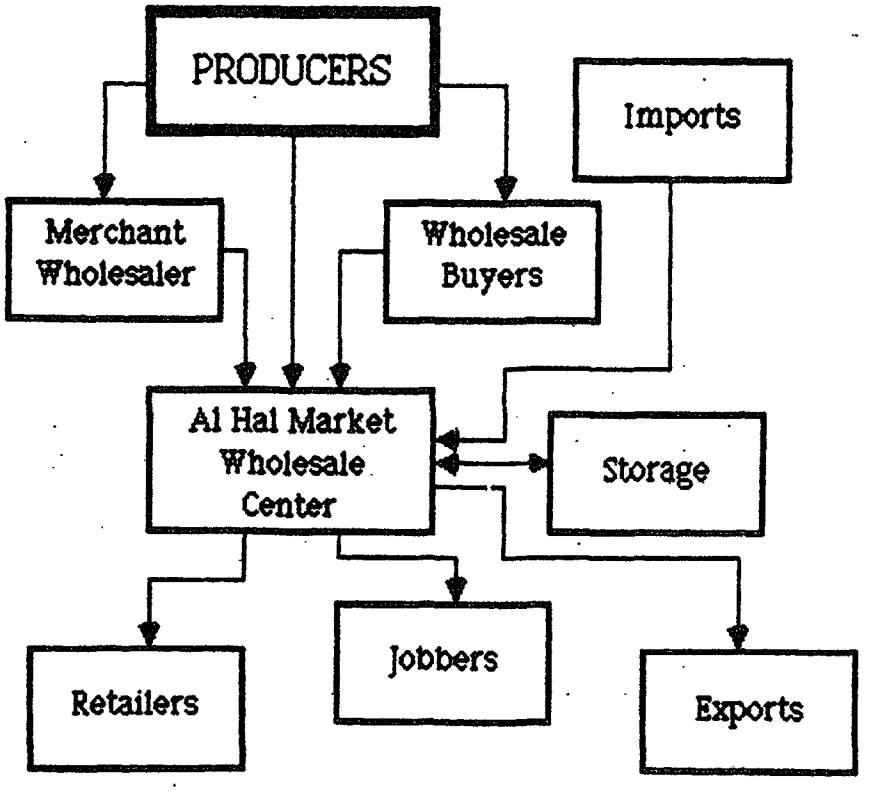
MARKETING AND TRADE OF COTTON



MARKETING CHANNELS OF FRUITS AND VEGETABLES COMPANY



TRADITIONAL MARKETING CHANNELS FOR FRUITS AND VEGETABLES



ANNEX II

SYRIA

AGRICULTURAL SECTOR SURVEY

Pricing, Marketing and Subsidies

Pricing

1. The pricing methodology employed (a panterritorial producer price based on an average cost of production plus a margin) coupled with the market structure for strategic commodities, the crop licensing and production system, the overvalued currency and the objective of low consumer prices for certain food commodities has been costly for government, distorting efficient resource use and preventing the development of more efficient marketing institutions. It is recognized that resource efficiency is but one of a number of political-social-economic objectives with which the Government is concerned. An efficiency pricing methodology would assist Government in identifying the costs of alternative pricing decisions, particularly the fiscal impact caused by price distortions. The methodology is designed to optimize resource use and product allocation between export and import substitution commodities.

2. Where allocative efficiency is not generated by competitive market forces, the relevant price references are the import or export prices of the various commodities translated into the domestic currency at an appropriate exchange rate. The import/export price represents the social opportunity cost/benefit of using/producing the commodity. If the use/production of the commodity impacts upon imports, an import border price is assigned, and, if it impacts on exports, an export border price is assigned. The border price represents the cost of resources used in the production and marketing of the particular commodity if world trade is a feasible option. Border prices can be derived directly from trade statistics if Syria actually trades the commodities, although an exchange rate adjustment may be necessary. If the commodity is a potential import or export, the border price must be derived from an internationally quoted price, appropriately adjusted for quality differentials, transport-marketing costs and the exchange rate.

3. The adoption of border pricing would ensure the most efficient use of resources, but, given the other objectives the Government has assigned to price policy, criteria other than efficiency may be considered. In considering additional criteria Government may set prices at alternative levels. Nonetheless, using border prices (efficiency prices) as the bases for price determination would provide a benchmark, permitting the Government to identify the economic cost of using an alternative price. The relevant border price is the long-term trend price; not the precise price at a particular time.

4. Pricing to achieve self-sufficiency disregards resource efficiency, as the issue is to determine a price which will result in adequate production and marketed surplus regardless of efficiency. If the self-sufficiency price is above the import border price, it would be more efficient to import the commodity rather than produce it, and the difference between the two prices would represent the incremental opportunity cost to the economy of pursuing the self-sufficiency objective.

5. An efficiency based pricing methodology is necessary but not sufficient to ensure that resources are allocated optimally as the marketing institutions and structures must also be efficient. The concern for alleged "middleman" exploitation of producers and consumers has led to the creation of public sector marketing monopolies. Thus, the exploitation potential has shifted from producers and consumers to the public treasury. Where monopoly power exists, either private or public, there is no inherent pressure to perform efficiently. The creation of these monopolies has required very considerable public investment; and, without alternative institutions, it is not possible to determine their levels of efficiency. If producer/consumer exploitation is perceived to be an actual or potential problem, an appropriate solution would be monitorable controls or the creation of a public sector marketing institution which would compete with the private sector. Producers and consumers would then have the choice of marketing institutions, presumably selecting the one which best served them.

6. An appropriate objective of marketing policy is improved efficiency. Private, cooperative or public sector marketing should be permitted and promoted where it is demonstrably more efficient. The Syrian processing and manufacturing sector reflects a mixed ownership pattern comprising both public and private entities; agricultural marketing should also be permitted to reflect this pattern. Government resources should be directed into those activities which will make marketing more efficient and where private investment is unlikely; this would include market service infrastructure on information collection and dissemination, quality control, standardizing and grading.

Subsidies

7. Given the domestic and international commodity prices and the exchange rate, Syrian producers receive implicit price subsidies on a number of commodities. (At a more realistic exchange rate they would be implicitly taxed on many of these same commodities.) However, explicit production subsidies apply only to fertilizers and some seeds. Their budgetary impact is relatively small but, nevertheless, should be phased out. Potassic and mixed fertilizers are imported at an exchange rate of LS 3.90 = US$1.00 and comprise a minor portion of total fertilizer; they are generally sold at cost recovery prices. The predominately used nitrogenous and phosphatic fertilizers are produced locally in adequate quantity, but domestic production costs have been higher than import parity prices and considered too high to pass on to

farmers. Consequently, the fertilizer company is subsidized. Detailed subsidy information is not available; however, the aggregate subsidies for 1982 and 1984 were estimated to be LS 200 and LS 134 million on sales of 218,000 and 464,000 tons, respectively (a per ton subsidy of LS 917 and LS 289 for the respective years). In the past, a major reason for costly nitrogenous fertilizers was the high cost of the naptha feedstock. The feedstock source has been changed to lower-cost natural gas, and technical production efficiencies have been introduced with anticipated cost reductions and lower subsidies.

8. Consumer subsidies exist for five food items, four of which have long been subsidized; wheat flour/bread, vegetable oil, rice and sugar. Tea was added to the commodity subsidy list in late 1985. The wheat flour/bread subsidy, caused by conflicting price objectives for producer and consumer products, is of overwhelming fiscal importance. To promote the expansion of wheat and provide producers with acceptable income levels, the producer price has been set above the border price (at the official exchange rate). However, low and stable bread prices have been maintained for social reasons. Further, bread is available in unlimited supply--contributing to unnecessarily large quantities being produced. Low bread prices are maintained by subsidizing the selling price of wheat flour. Consumption of wheat products in flour equivalents rose to 1.2 million tons in 1985 - more than a 50% increase over the 1980 level.

9. Most subsidized wheat flour is sold to the public and private sector bakeries, with small quantities sold to other public sector institutions. Private sector bakers produce about two-thirds of the bread supply, paying LS 600/ton for high-quality flour and LS 299/ton for standard-quality flour. As all wheat flour is milled by the General Company for Milling (GMC), a public sector monopoly, subsidy requirements and payments are easily monitored and controlled. Subsidies comprise the difference between the price the GMC must pay for wheat plus milling costs and the price at which they sell flour to bakeries, i.e., the LS 600 and LS 299 mentioned above. GMC's domestic procurement prices for purchases from GOTPC, for 1981-85 were as follows:

Year	Domestic Purchase Price	
	Hard Wheat (LS/ton)	Soft Wheat (LS/ton)
1981	1,458	1,391
1982	1,684	1,601
1983	1,813	1,656
1984	1,813	1,656
1985	2,153	2,037

Subsidies increased from about LS 1.2 billion in 1981 to LS 2.4 billion in 1985 (Table II.1). If there had not been a shift in the composition of flour

consumption, the 1985 subsidy would have been even higher. Prior to 1985, flour of standard quality (at about 78% to 80% extraction rate) accounted for over 95% of the total consumed. In 1985, the proportion of high-quality flour (72% extraction rate) increased to 30% of the total consumed causing the subsidy to that component to increase to about 25% of the total flour subsidy.

Table II.1: ESTIMATES OF CONSUMPTION, PRICES AND IMPLIED SUBSIDY IN WHEAT FLOUR FOR BREAD IN SYRIA, 1981-85 /1

	High Quality			Standard Quality			
	Quantity ('000 ton)	Selling Price (LS/ton)	Subsidy (LS M)	Quantity ('000 ton)	Selling Price (LS/ton)	Subsidy (LS M)	Total Subsidy (LS M)
1981	40	600	47	764	299	1,150	1,197
1982	43	600	62	828	299	1,481	1,543
1983	46	600	72	864	299	1,658	1,730
1984	49	600	77	926	299	1,775	1,852
1985	330	600	558	770	299	1,811	2,369

/1 Estimates based on information provided by the Ministry of Supply and Domestic Trade.

Notes: (1) Bread is estimated to be 118% of total flour used in bread making.
(2) Flour is composed of 40% hard wheat and 60% soft wheat.

10. Ration cards for the procurement of sugar, rice and vegetable oil at subsidized prices have been in use in Syria since 1967. Each ration booklet contains 180 coupons stating the number of beneficiaries, which may range from 1 to 10. A booklet may be used by Syrian nationals in any province in the country, but each coupon must be used within a specified period. Each citizen, regardless of age, is allowed a monthly ration of 1.5 kg of sugar, 750 g of rice, 250 g of vegetable oil and, commencing in 1985, 100 g of tea. Between 1972 and 1984 the ration prices were LS 0.85 /kg of sugar and LS 0.80/kg of rice and between 1980 and 1984, LS 2.00/kg of vegetable oil. In 1985 the prices were increased to LS 1.50/kg, LS 1.50/kg and LS 3.00/kg, respectively. However, these prices remain below the market prices, which were reported to be LS 3.00/kg, LS 3.00/kg and LS 7.00/kg of the respective commodities.

11. All rice consumed in Syria is imported. Data indicate that per capita consumption has been relatively stable between 1980 and 1985 at about 11.5 to 12.0 kg. Thus, consistent with population growth, rice consumption increased by about 15% to 131,000 tons in 1985. Rationed rice comprises 80% to 85% of the total quantity distributed (Table II.2). The estimated subsidy,

using import cost data, population and per capita ration allowances, reached a peak in 1982 when rice import prices were high. Since 1982, the subsidy declined markedly, partially due to the decline in the international price of rice, and in 1985 due to the increase in the rationed price to LS 1.50/kg.

Table II.2: CONSUMPTION, RATIONED AND UNRATIONED PRICES, AND IMPLIED SUBSIDY FOR RATIONED SUGAR, RICE AND VEGETABLE OIL, 1981-85 /1

	Quantity		Price		Average Cost	Subsidy
	Rationed	Unrationed	Rationed	Unrationed	(LS/kg)	(LS M)
	('000 tons)		(LS/kg)			
Rice						
1981	84	26	0.80	2.50	2.49	141
1982	87	38	0.80	2.50	2.70	172
1983	88	29	0.80	2.50	2.09	103
1984	92	25	0.80	2.50	1.64	57
1985	95	26	1.50	3.00	1.75	24
Sugar						
1981	168	150	0.85	3.00	3.69	580
1982	175	155	0.85	3.00	3.88	667
1983	177	173	0.85	3.00	3.04	395
1984	184	191	0.85	3.00	2.84	335
1985	191	199	1.50	3.00	2.62	138
Vegetable Oil						
1981	28	7	1.60	6.00	4.75	88
1982	29	11	2.00	6.00	5.00	87
1983	29	11	2.00	6.00	5.00	88
1984	31	9	2.00	6.00	5.25	98
1985	32	10	3.00	7.00	6.00	96

/1 Mission estimates based on information provided by Ministry of Supply and Domestic Trade.

12. The per capita consumption of sugar increased by about 2 kg between 1981 and 1985, when it reached 37 kg. Although government policy was committed to the expansion of domestic sugar production, it has fallen short of consumption requirements. As a result, imports increased substantially, 111,000 and 140,000 tons in 1982 and 1983, respectively. Rationed sugar

accounted for about one-half of the total quantity distributed (Table II.2). The estimated sugar subsidy reached a peak in 1982 and then declined, due to the declining international price and to the ration price increase in 1985.

13. Per capita consumption of vegetable oil remained stable at 3.7 kg/year during the 1980s. Domestic production, mostly from cottonseed, at about 20,000 tons accounted for about two-thirds of consumption demand. About 75% of vegetable oil sales are ration sales (Table II.2). The estimated vegetable oil subsidy has been relatively stable with a modest increase in 1984 and 1985, when it was LS 98 and LS 96 million, respectively.

14. Consumer subsidy estimates for rice, sugar and vegetable oil may have been overestimated in the earlier years, as the data used were less reliable, but should be indicative for 1984 and 1985. If the ration allowance is not fully utilized, due to supply shortages or other administrative constraints, the subsidy bill would be reduced proportionately. For example, if only 75% of the ration allowances were actually purchased, the 1985 subsidies for sugar and vegetable oil would be reduced to LS 66 and LS 54 million, respectively, and the rice subsidy would be eliminated. Nevertheless, the best estimate of the total food subsidy for 1985 is LS 2.6 billion.

15. Consumer subsidies represent a significant fiscal drain and some method must be found to reduce their budgetary impact. The price of bread is exceptionally low by any standard; if full cost recovery prices are unacceptable on income and equity grounds, a process of recovering a greater portion of costs should be devised. Bread is available in unlimited quantity to all consumers at a highly subsidized rate. The low price does not discourage waste and encourages the diversion of bread to poultry feeding. Increasing the price would discourage waste and diversion. If for social reasons a low bread price is maintained, a rationing procedure similar to that used for sugar, cooking oil and rice would reduce the aggregate subsidy bill. The cost recovery bread price would be an index price of 100. With a ration coupon, the purchase price might be (for example) 60% of the index price. The baker or retailer could then redeem the coupon for the 40% balance. If consumers wanted to purchase additional quantities of bread, the cost recovery price would be paid.

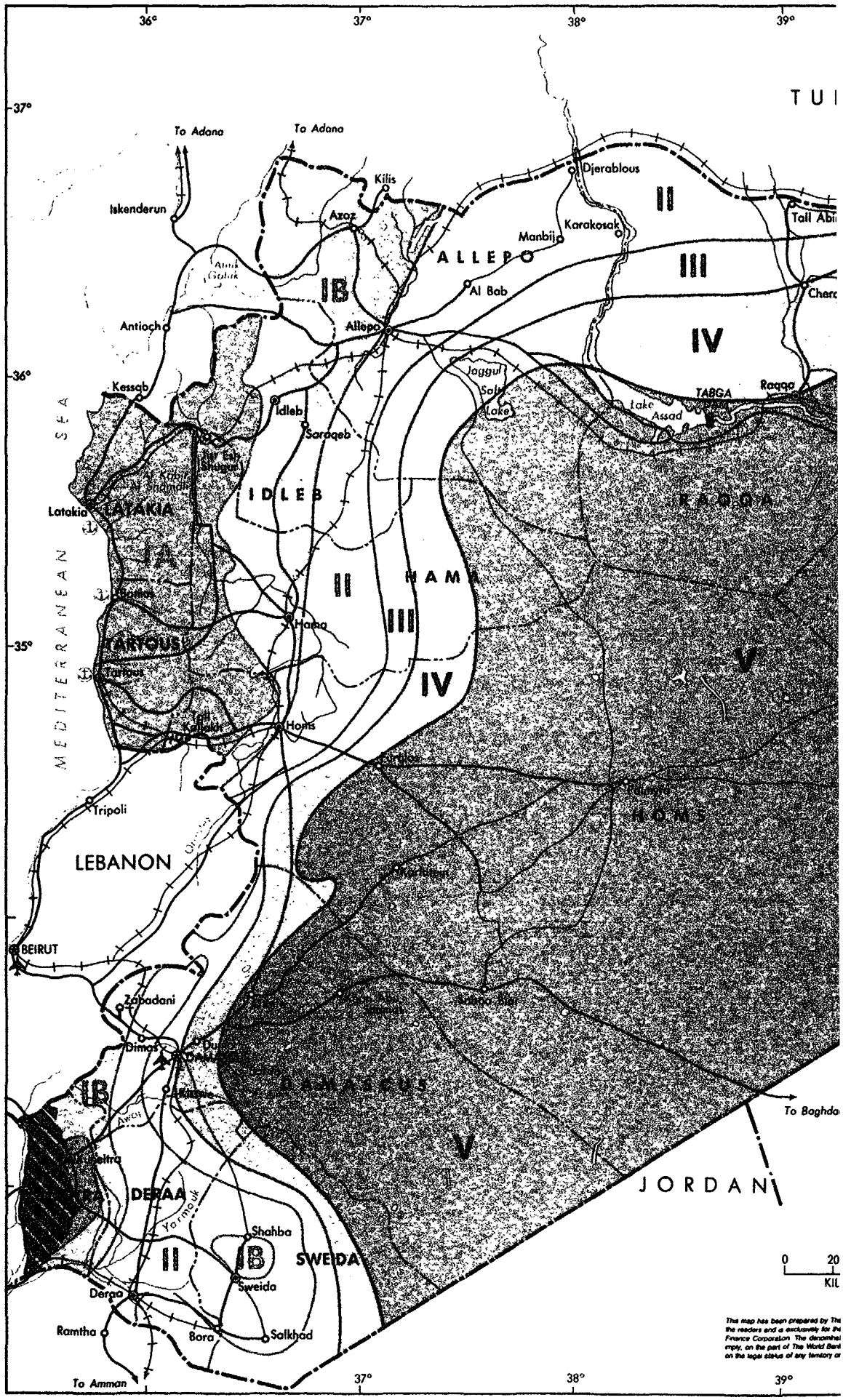
16. Although income distribution in Syria is more equitable than in many countries, it is the lower income earning group that is in greater need of consumption subsidies than the majority of the population. If this group can be identified and provided with ration coupons, the aggregate subsidy would be substantially reduced. The higher income groups could be taxed through a higher than cost recovery price and the benefits transferred to the lower income group in the way of a price subsidy.

17. Also, a cross-subsidy could be implemented through differential quality pricing. There are currently two different qualities of flour and bread which are differentially priced. If the higher-quality flour/bread was

priced above the cost recovery level, it could subsidize the lower-quality bread consumed by the lower-income consumers. (Quality in this instance refers to eating characteristics, not nutritional composition. The lower-quality bread is, in fact, nutritionally superior.)

18. Although the flour subsidy is the major consumer subsidy, rice, sugar and vegetable oil also contribute to the subsidy bill. Given that bread is readily available in subsidized and unlimited quantity, the subsidization of rice, which is totally imported, seems inappropriate. Ration coupons are issued for about 80% of the rice that is consumed in Syria.

19. The cost of domestic sugar production is several times greater than the import cost; consequently, most sugar is imported. About 50% of the sugar consumed is purchased at a subsidized price. The total subsidy bill for sugar, like rice, has recently declined but still totals over LS 100 million. The vegetable oil subsidy has remained relatively constant at just under LS 100 million. Most vegetable oil is from domestic production, although imports typically total more than LS 100 million.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To Adana
To Adana
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Al Bab
Tall Abi
Chera
Amik Gölük
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IV
Antioch
Allepo
Jaggul Salt Lake
Lake Assad
TABQA
Raqqa
Kessab
Idleb
Saraqeb
Kfar Lah Shughur
IDLEB
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Tripoli
LEBANON
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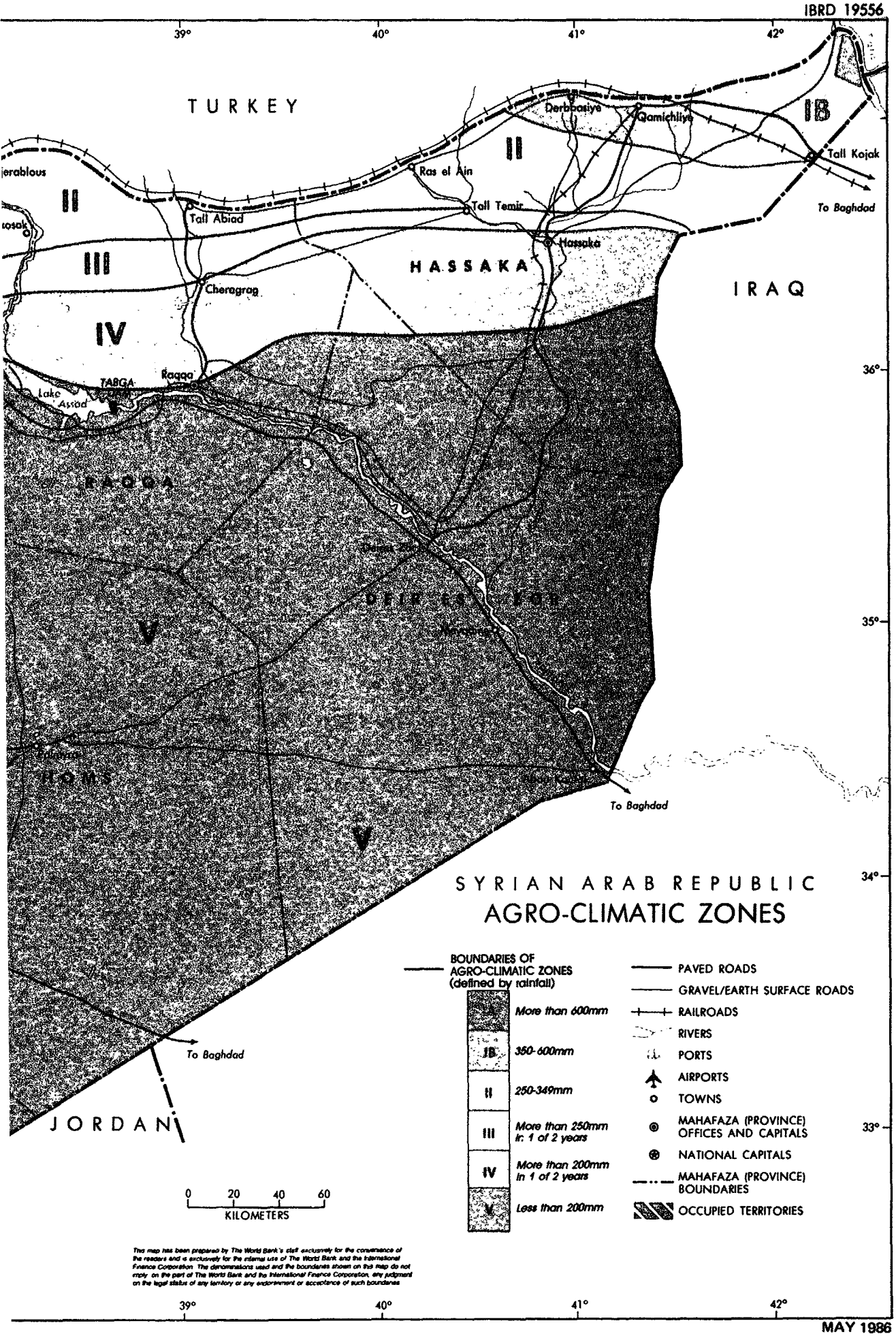


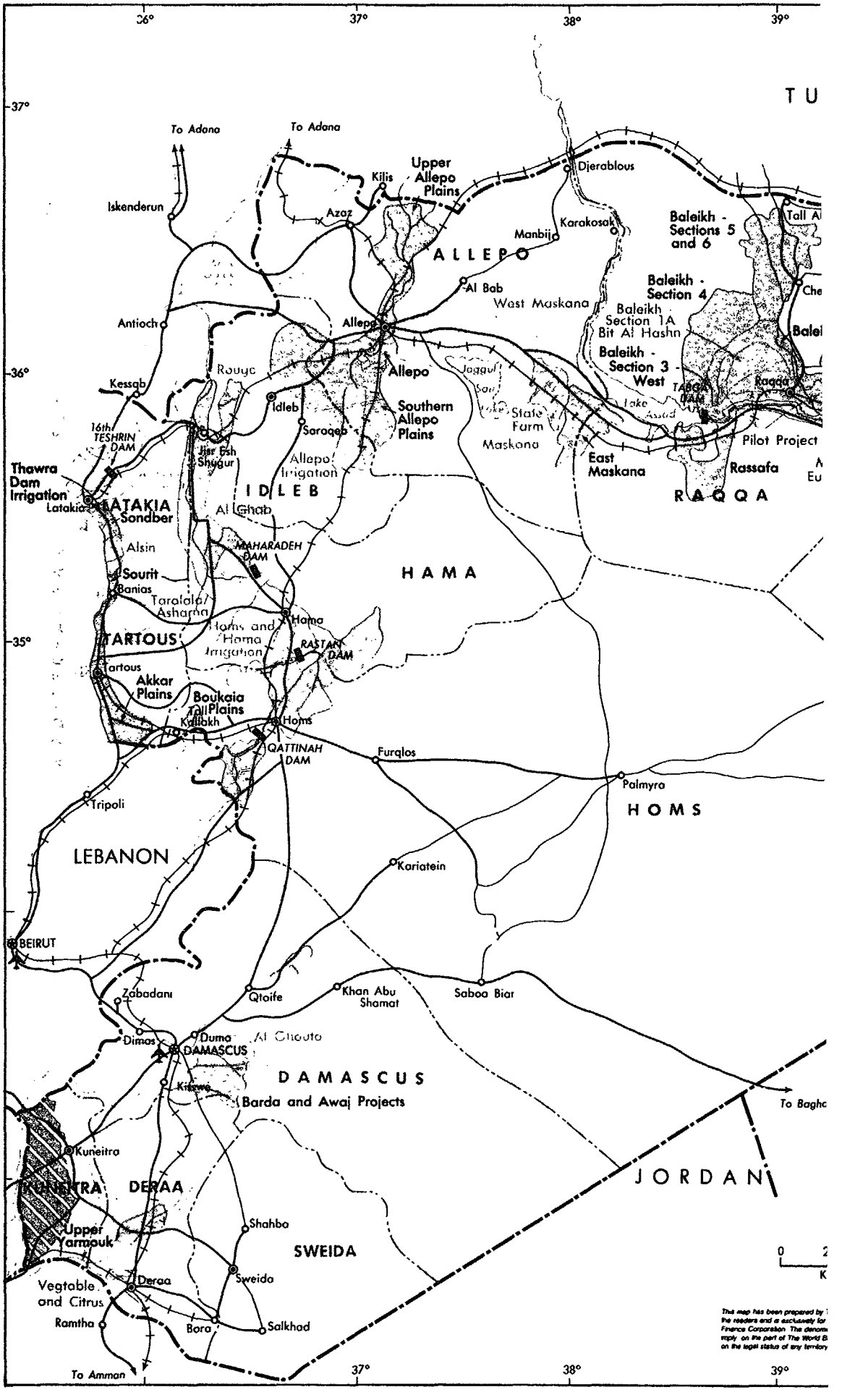
SYRIAN ARAB REPUBLIC
AGRO-CLIMATIC ZONES

BOUNDARIES OF AGRO-CLIMATIC ZONES (defined by rainfall)

IA	More than 600mm
IB	350-600mm
II	250-349mm
III	More than 250mm in 1 of 2 years
IV	More than 200mm in 1 of 2 years
V	Less than 200mm

- PAVED ROADS
- GRAVEL/EARTH SURFACE ROADS
- RAILROADS
- RIVERS
- PORTS
- AIRPORTS
- TOWNS
- MAHAFAZA (PROVINCE) OFFICES AND CAPITALS
- NATIONAL CAPITALS
- MAHAFAZA (PROVINCE) BOUNDARIES
- OCCUPIED TERRITORIES

MAY 1986


36°
37°
38°
39°
37°
36°
35°
To Adana
To Adana
Iskenderun
Kilis
Upper Allepo Plains
Azaz
Djerablous
Manbij
Karakosak
ALLEPO
Baleikh - Sections 5 and 6
Al Bab
West Maskana
Baleikh - Section 4
Baleikh Section 1A Bit Al Hashn
Baleikh - Section 3 - West
Antioch
Allepo
Allepo
Southern Allepo Plains
Rouge
Kessab
Idleb
Saraqeb
Jaggul
State Farm
Maskana
TABQA DAM
Lake Assad
Raqqa
Pilot Project
East Maskana
Rassafa
RAQQA
16th TESHRIN DAM
Jisr Esh Shoqur
Allepo Irrigation
IDLEB
Thawra Dam Irrigation
Latakia
LATAKIA
Sondber
Al Ghab
Alsin
MAHARADEH DAM
Sourit
Banias
HAMA
Tartous/ Asharna
Homs
Homs and Hama Irrigation
RASTAN DAM
TARTOUS
Tartous
Akkar Plains
Boukaia Tall Plains
Kalibkh
Homs
QATTINAH DAM
Furqlos
Palmyra
HOMS
Tripoli
LEBANON
Kariatein
BEIRUT
Zabadani
Qtoife
Khan Abu Shamat
Saboa Biar
Dimas
Duma
DAMASCUS
Al Ghouta
DAMASCUS
Kiswe
Barda and Awaj Projects
To Bagho
Kuneitra
KUNEITRA
DERAA
JORDAN
Shahba
Upper Yarmouk
SWEIDA
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Deraa
Vegtable and Citrus
Ramtha
Bora
Salkhad
To Amman
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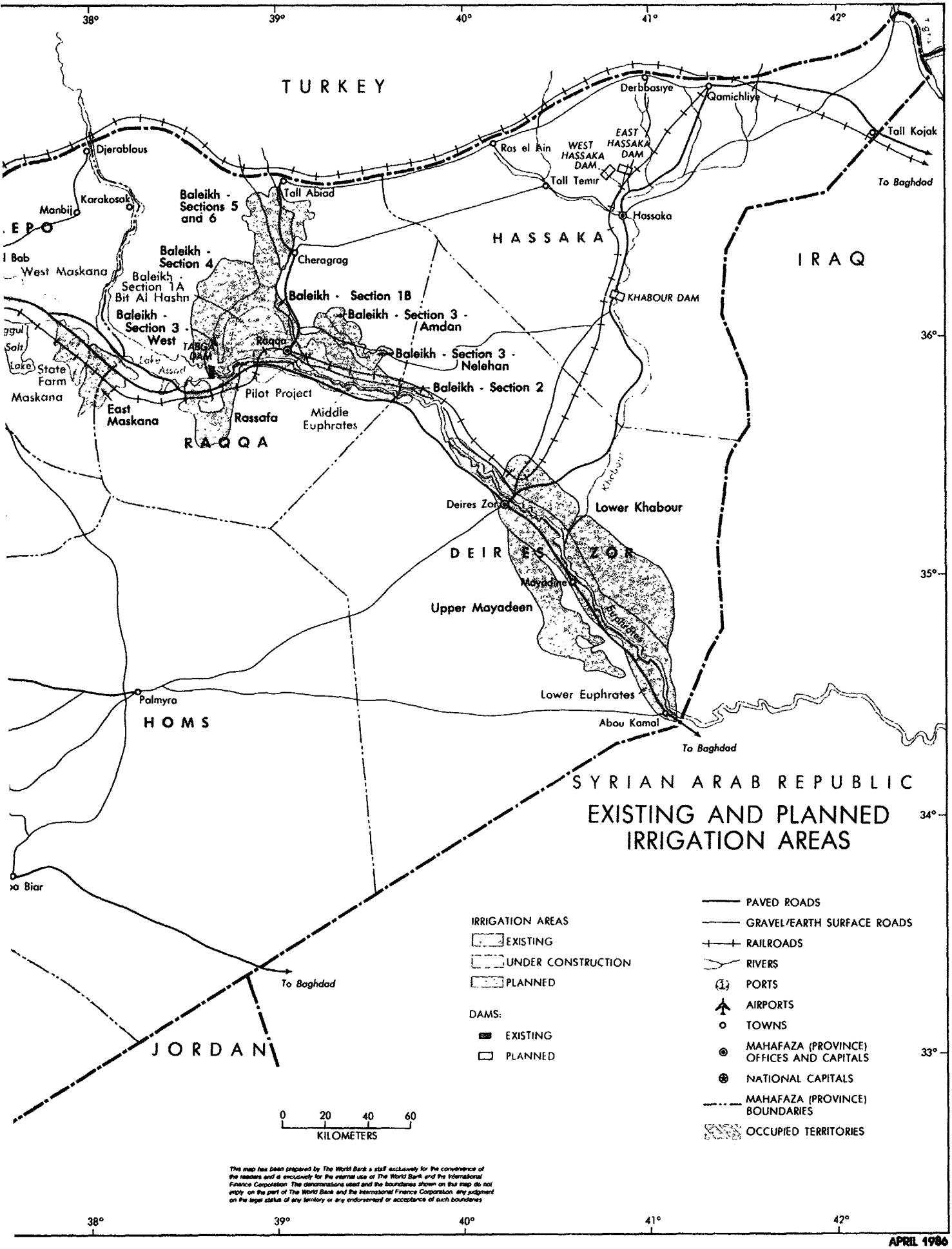

APRIL 1986