Acknowledgement

I would like to express my thanks to my supervisor Dr. Abd El Moniem Mohamed El Shiek for his encouragement and guidance throughout the course of this study.

My thanks are also expressed to my co-supervisor, El Hag Hamed A/Aziz for his assistance, helpful comments in conducting this study.

My sincere thanks and also indebted to the ABS for providing financial support for my study, and training center Staff for their help.

It is difficult to acknowledge all the individuals who helped me, but special appreciation should be expressed to those who encouraged and assisted me in education.

I am grateful to the Staff of the ABS- Kuku Branch for their unforgettable help.

Thanks and deepest gratitude go to my late father and mother for their lovely teaching, to love people and also to my family.
ABSTRACT

The main purpose of the study is to analyze and study ways and means by which the amount of vegetable exports could be increased and the role of ABS in this respect.

To achieve this purpose, the study used two types of data, the first one is based on interviewing vegetable producers who are engaged in vegetable exports financed by ABS in El Saliet Agricultural scheme – Eastern Nile locality – Khartoum State, season 2002/2003, and the second type of data is secondary data collected from various publications, including AOAD, ABS and others.

However, budget analysis, descriptive statistics, regression analysis, Cobb-Douglas productions function in logarithmic form were used for analysis. The analysis showed the constraints facing the production of vegetable for exports, which are summarized in production costs, which revealed that, the cost of material inputs represent the highest share relative to the total cost of production for both crops (melon and green bean). Packing materials and air transport represent the highest costs of marketing.

The loans given by ABS to vegetable production were very small compared to actual farmer need (cost of production and marketing), and also poor market information abroad.

The budget analysis showed that the export of vegetables was more profitable to producers.

Regression analysis using Cobb-Douglas production function that considers the factors affecting the quantity of vegetable exports (during 20 years (1982-2001)), indicates that, total production, the quantity of local consumption, and the export price (FOB price) were significant factors in explaining the variation of quantities of vegetable exports.

And also the result, revealed that credit or ABS services to vegetable producers was the insignificant factor in explaining the variation of quantity exported.

Finally, the study recommended that:
- The ABS should give more efforts to provide enough amounts of credit to vegetable producers for covering agricultural inputs, cultural practices, and other services needed in reasonable quantities at proper time for production of exported vegetables.
- The government should reduce taxes on the horticultural products and minimize customs regulation.
- To find suitable ways for reducing cost of air transport and study of possibility of employing sea transport.
- To develop means of information about markets abroad and making it available for producers and exporters.
الخلاصة

هدفت الدراسة إلى بحث طرق وكيفية زيادة كمية الصادرات من الخضراوات ودور البنك الزراعي السوداني فيها.

لتحقيق هذا الهدف استخدمت الدراسة المصادر الأولية التي جمعت خلال مقابلات ميدانية بمدينة السليط (مشروع السليط الزراعي) ومحطة شرق النيل – ولاية الخرطوم، والمعلومات الثانوية جمعت من المطابع المتعددة أمثال المنظمة العربية للتنمية الزراعية البنك الزراعي السودان والمصادر الأخرى.

لتحليل البيانات تم استخدام نموذج (كوب دوقلاس) في صورتها الخطية. أوضح التحليل المعوقات التي تواجه أنتاج الخضر للصادر وتلخص في تكاليف الإنتاج التي وضعت أن تكلفة المدخلات العينية هي الأعلى مقارنة بالتكلفة الكلية للإنتاج من كل المحاصيل الزراعية (الشمام والفاصوليا الخضراء). بالإضافة إلى ذلك فإن تكاليف مواد التعبئة والشحن الجوئ تمثل تكاليف رئيسية للتسويق الخارجي.

تم تمويل البنك الزراعي السوداني لمنتجي الخضر ضعيف مقارنة بالاحتياجات المزارع (تكاليف الإنتاج والتسويق) وكذلك ضعف المعلومات للسوق العالمي، أوضح التحليل الميزانية أن أنتاج الخضر للصادر يحقق ربحية وعائدات مجزية للمزارعين.

أوضح تحليل دالة الإنتاج بأن العوامل تأثيراً على كمية الصادر من الخضر هي إجمالي الإنتاج، كمية المستهلك المحلي وأسعار الصادرات خلال 20 سنة (الموسم 1982-2001). أيضاً أوضحت نتائج الدراسة بأن نسبة تمويل البنك الزراعي ليس له تأثير على كمية الصادر.

واخيراً خلصت الدراسة إلى التوصيات الآتية:

- أن يقوم البنك الزراعي السوداني بتوفير التمويل اللازم لمنتجي الخضر لتغطية كل تكاليف المدخلات الزراعية، العمليات الزراعية، والخدمات الأخرى في الوقت المناسب لانتشار الخضر للصادر.

- أن تقوم الحكومة بتنقير الضرائب المنتجات البستانية وتخفيف الإجراءات الجمركية.

- إيجاد طرق لتقليص تكلفة الشحن الجوئ وكيفية وصول كل المعلومات عن السوق العالمي للمستهلكين والمصادر للخضير والفواكه.
### TABLE of CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dedication</td>
<td>I</td>
</tr>
<tr>
<td>Acknowledgement</td>
<td>II</td>
</tr>
<tr>
<td>English abstract</td>
<td>III</td>
</tr>
<tr>
<td>Arabic abstract</td>
<td>IV</td>
</tr>
<tr>
<td>List of contents</td>
<td>VII</td>
</tr>
<tr>
<td>List of tables</td>
<td>IX</td>
</tr>
<tr>
<td>List of figures</td>
<td>IX</td>
</tr>
<tr>
<td>List of Appendices</td>
<td>IX</td>
</tr>
<tr>
<td>Glossary of Acronyms and Abbreviations</td>
<td>IX</td>
</tr>
<tr>
<td>Chapter one</td>
<td>I</td>
</tr>
<tr>
<td>1- Introduction</td>
<td>1</td>
</tr>
<tr>
<td>1.1: The agricultural sector in Sudan</td>
<td>1</td>
</tr>
<tr>
<td>1.2: The agricultural Bank of Sudan (ABS)</td>
<td>3</td>
</tr>
<tr>
<td>1.3: Vegetables and fruits production in Khartoum State</td>
<td>6</td>
</tr>
<tr>
<td>1.4: The problem Statement</td>
<td>10</td>
</tr>
<tr>
<td>1.5: Objectives of the study</td>
<td>12</td>
</tr>
<tr>
<td>1.5.1: The main objective</td>
<td>12</td>
</tr>
<tr>
<td>1.5.2: Sub-objectives</td>
<td>12</td>
</tr>
<tr>
<td>1.6: Hypotheses of the study</td>
<td>12</td>
</tr>
<tr>
<td>1.7: Methodology and Conceptual Framework</td>
<td>13</td>
</tr>
<tr>
<td>Chapter Two</td>
<td>15</td>
</tr>
<tr>
<td>2- Literature Review</td>
<td>15</td>
</tr>
<tr>
<td>2.1: The production, harvesting and processing</td>
<td>15</td>
</tr>
<tr>
<td>2.2: Export capacity of vegetables grown</td>
<td>16</td>
</tr>
<tr>
<td>2.3: The need for credit</td>
<td>16</td>
</tr>
</tbody>
</table>
2.4: The formal credit 17
2.5: The informal credit 18
2.6: Vegetables marketing 18
2.7: The social factors 19
2.8: Marketing of agricultural products. 19

Chapter Three 20

3-The production of vegetables for exports in Khartoum State, season 2002/2003 20
3.1: Cultural practices and inputs 20
3.2: The cost of production for producers 20
3.2.1: The cost of cultural practices 23
3.2.2: Inputs costs 23
3.2.3.1: Melon profitability 25
3.2.3.2: Green beans profitability 25
3.3.1: The cost of production of principal crops for producers who are exporters at the same time, season 2002/2003 26
3.3.2: The profitability of principal crops (melon and green bean) 26
3.4: The cost and profitability to the exporters only 29
3.4.1: The marketing costs 29
3.4.2: The purchasing price of principal crops 30
3.4.3: Air freight costs 30
3.4.4: Exports cost and the margins of exported crops 32
3.5: Exporting and competing countries with Sudan 34
3.5.1: Markets for Sudanese fresh vegetables 34
3.5.2: Possible markets for Sudanese vegetables 35
3-5-2-1: Western Europe markets 35
3-5-2-2: The Middle East markets and Gulf area 36
3-6: Agencies involved in Exporting vegetables 37
3-6-1: Sudanese Agricultural Producers Company 37
3-7: The role of credit 38

Chapter Four 42
4-1: Results and Discussions of the Research Finding 42
4-2: Factors affecting the quantity of vegetables exports 43
4-3: Regression Results Discussions 43
4-3-1: The quantity of vegetables exports 44
4-3-2: The total annual production 44
4-3-3: The quantity of domestic consumption 45
4-3-4: The FOB price 46
4-3-5: The ABS services to vegetables producers 46

Chapter Five 50
5: Summary, Recommendations, and Constraints and Limitations of the study 50
5-1: Summary of the study 50
5-2: Recommendations of the study 52
5-3: Constraints and Limitations of the Vegetable Exports sector. 53
5-4: Constraints and Limitations of the study. 54
5-5 Recommendations of Further Research. 54

The bibliography 55
LISTS OF TABLES

1-1 Contribution of Agricultural Sector to GDP for 1992-1999 (SD . Million) 2
1.2: Contribution of the main agricultural crops export earnings of the Sudan (1992-1997) 2
1.3: Types and quantities of horticultural exports for the period 1995-1998 3
1.4: Loans provided by ABS (1998 – 2002 ) (thousand Dinars) 6
1.5: Types and amounts of loans provided by ABS during 1998 –2002 (thousand Dinars) 6
1.6: Horticultural crops, exports from Khartoum State from 1997-2001 in M.T. 8
1.7: Melon exported during 97-2001 in M.T. 8
1.8: Green bean exported during 97-2001, in M.T. 9
1-9: Mango exported during 97-2001 in M.T. 9
1-10:Vegetables and fruits imported during 1997-2001 in M T 9
1-11:Vegetables and fruits Arab Countries imported during 1997-2001 MT 10
3-1 Total cost of production of vegetable crops per feddan in SD. For Season 2002/2003 22
3-2 Percent of total cost per feddan for melon crop 22
3-3 Percent of Total cost per feddan for green Beans crop 24
3-4 Percent the profitability of principal crops (Melon and green Beans) per feddan for producers only 26
3-5 Total cost of production and marketing of vegetables per feddan, season 2002/2003 in M.T. and in SD (for producers who are also exporters) 27
3-6 The profitability of production of vegetable crops 28
3-7 Total costs and net return for vegetables exporters
SD. Per M.T., season 2001/2002

3-8 Summary of Gross Margins of Horticultural Exports in SD/M T

3-9 The position of the Sudan Relative to its Main competitors

3-10 The Main producing countries in the world and production duration.

3-11 Percent of loans given to farmers (customers) by ABS – Kuku branch during 10 years (1993—2002) (1000SD).

4-1 Coefficient

4-2 ANOVA table (Regression analysis).
List of figures

3-1 The cost of cultural practices and inputs for Melon and Green Bean crops production (1000 SD). 25
3-2 The cost of cultural practices, input and Marketing cost (Export Costs) for melon and green beans crop 28
3.3 The cost of purchasing and marketing of vegetables and fruits exported during 2001/2002 (1000SD) 31

List of Appendices :

3-1 Percent of financing vegetable production for exports during 10 years (1993-2002) by ABS Kuku branch 40
4-1 Quantity of vegetable exports in M T (1992-2001) 47
4-2 Total annual production (1000 M T). 48
4-3 FOB price (million SD). 48
4-4 Amount of credit provided to vegetable producers by ABS (Million SD.) for 10 years (1992-2001) 49

List of Abbreviations :

ABS : Agricultural Bank of Sudan
AOAD : Arab Organization for Agricultural Development
FAO : Food and Agriculture Organization
FOB : Free On Board
GDP : Gross Domestic Products
M C : Marketing Cost
MoA : Ministry of Agriculture
MPT : Master Plan Team
MT : metric tons
NR : Net Return
SD : Sudanese Dinar
SPSS : Statistical Programme for Social Sciences
SR : Sales Return
TC : Total Cost