CONSTRAINTS AND RESULTS ANALYSIS OF THE SPICE INDUSTRY IN PAPUA NEW GUINEA

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ABSTRACT

Most of the currently cultivated spice crops in Papua New Guinea [PNG] were introduced in the 1960's and 1970's, but to date, there is no spice industry plan, despite the approval of a Spice Industry Act in 1989. This report is a component of the outcome of the PNG Spice Industry Workshop, held on the 18th and 19th of September 2003, at the Gateway Hotel, and DAL – Konedobu Conference Room respectively to to initiate discussions towards the formulation of PNG Spice Development Plan. It is by understanding the issues that constraints the industry, then only would appropriate solutions be formulated to address them. The ***ineffectiveness of the Spice Industry in Papua New Guinea*** *could be classified broadly into two* ***inter linked*** *sub – components, namely;* ***Ineffective management*** *and* ***Poor operational*** *components. As such, improvements in the management and operational components would help boost the efficiency and effectiveness of the spice industry in PNG. It is expected that, the information in this report would be useful to the planners and people in the Spice Industry for the formulation of the PNG Spice Industry Plan[s] for the future.*

Key words*: Spice, vanilla, cardamom, ineffective management, poor operational component*

INTRODUCTION

The loss of over 80 percent of Madagascar vanilla plantations through cyclone damages has contributed to decline in world production of natural vanilla in late 1990s to 2000. This has seen vanilla prices souring in the world-wide. PNG farmers are taking advantage of the improved world prices through increased production and exports of vanilla. From less than one tonne production in 1998, vanilla exports is on the increase, reaching 46 tons in 2001, 70 tons in 2002 for a value of K23 million. [Spice Industry Board data]. The major production areas are; Wewak, Lae, Vanimo, Rabaul, Manus, Madang, and the National Capital District.

Other spices reported to be exported besides vanilla are; cardamom, and chillies, but the exports of these have been fluctuating over the years.

The spices, especially vanilla are now being considered as high impact crops that must be promoted alongside the major export tree crops; coffee, tea, cocoa and coconut. For the first time since the approval of the Spice Industry Act in 1989 and the inauguration of the Spice Board, the PNG Government in 2003 allocated K1.0 million to support capacity strengthening and operations in the spice industry.

Spice workshop and constraints analyses were subsequently held in September 2003, to deliberate on issues affecting the industry, and to plan for the future. The constraints and results analysis component is presented here for guidance and further deliberation by people in the spice industry.

MATERIALS AND METHODS

A cross section of personnel with association and knowledge in the spice industry who participated in the workshop also took part in the constraints analysis component, following the methodology of constraints / problem analysis [IRRI 1991, GTZ 1999 and Dekuku 2002]. The constraints were identified and written; one per each card. These were pinned on the wall, re-written, if necessary, and duplications eliminated, and finally grouped and arranged in a problem tree based on causes and effects scenario. Re-writing each of the constraints cards into positive statements led to the results tree, which also corresponds to means and ends scenario. The participants are acknowledged at the end of this report.

RESULTS AND DISCUSSIONS

The analysis indicated for the spice industry to be successful, some key issues must be addressed, and suggested also how those should be done [Figs 1 to 6]. These are highlighted below;

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2. Constraints Component of the PNG Spice Industry.

The identification of the constraints in the Spice Industry is an essential step in understanding the weaknesses in the industry, which in itself leads to a better understanding of the factors that are contributing to failures or stagnation in the industry.

The **ineffectiveness of the Spice Industry in Papua New Guinea** could be classified broadly into two **inter linked** sub – components, namely; **Ineffective management** and **Poor operational** components **[Fig 1]. Note that both components are inter-linked and must be addressed jointly.**

2.1. The Ineffective Management Component results from; **Ineffective Spice Board Leadership, Insufficient Funds, Frustrating Interests and Lack of Down Stream Processing [Fig. 2],** as discussed below;

2.1.1. Ineffective leadership in the industry is compounded by **lack of management and technical capacity** and **lack of coordination,** Other factors are; **lack of Spice Development Plans** which means there is **lack of Policy** and **Corporate plan** for spice development. As a result, the industry **lacks rules and regulation to regulate and guide the industry**, which **leads to poor linkages with Provinces and Stakeholders.** All these cumulatively **led to lack of coordination** and the subsequent **Ineffective Board Leadership [Fig 3].**

2.1.2. Insufficient funds for spice development, Government financial support to the spice industry is insufficient at the moment, and **Private sector investment is also limited.** In addition, there are **no credit facilities attuned to the spice industry.** Due to these, there is **lack of funds and credit** thus resulting into **insufficient funds for spice industry development.**

2.1.3. Frustrating interests in the industry, There is **stealing of spice beans in the field** as well as **on the way to market through hijacking**, and these are attributed to the **lack of control in spice exports, too many export licenses/ exporters, and lack of effective farmer associations or cooperatives.** The resulting **law and order problems** lead to **frustrating interest in the spice industry** [by producers and marketing agents].

2.1.4. Lack of down stream processing in the spice industry results from **lack of collaboration between Spice Industry Board and relevant Departments. Lack of expertise in down stream processing of some of the spices** and **lack of processing facilities** [this is interrelated to low production base under operational component].

2.2. The Poor Operational Component results from; **Low production base for most spices** [also influenced by lack of down stream processing], **inadequate information to guide the industry** and **poor market access for some of the spices [Fig. 3]**, as discussed below;

2.2.1. Low production base for most spices, results from **poor spice production systems**, which in turn is a result of **poor spice farm management practices, lack of good varieties and planting materials.**

The poor spice farm management practices results from **poor farmer training,** due to **poor extension information and poor extension services. Poor extension information** results from **spices not being part of the curriculum in schools** and subsequent **failure to train farmers. Poor extension service** is a consequence **of lack of training and re-training of extension staff and** therefore resulting in **inadequate extension staff performances.**

The lack of planting materials results from; **lack of seed and planting material multiplication centers.** While **Lack of good varieties is due to inadequate research on some spices,** which also results from **slow transfer of research technologies and insufficient research information** to the population.

2.2.2. Lack of adequate information to guide the industry, Lack of proper reporting and information systems and **lack of baseline data** in the Spice industry are causes of **inadequate extension, research, processing and market information on most spices.** This in turn leads to **lack of adequate information** [this directly contributes towards the low production base of most spices as well as poor marker access for some spices].

2.2.3. Poor market access for some of the spices results from **insufficient market outlet for most spices,** which is a consequence of **high marketing costs, inconsistency in supply** and **variable and mostly low prices for some spices.**

The high marketing costs result from **poor road, transport and marketing infrastructure and high freight costs. Variable and low prices for most spices** also result from **inconsistency in quality,** which in turn is a result of **lack of inspection and certification** resulting due to **inadequate regulations and mechanisms to enforce quality control.**

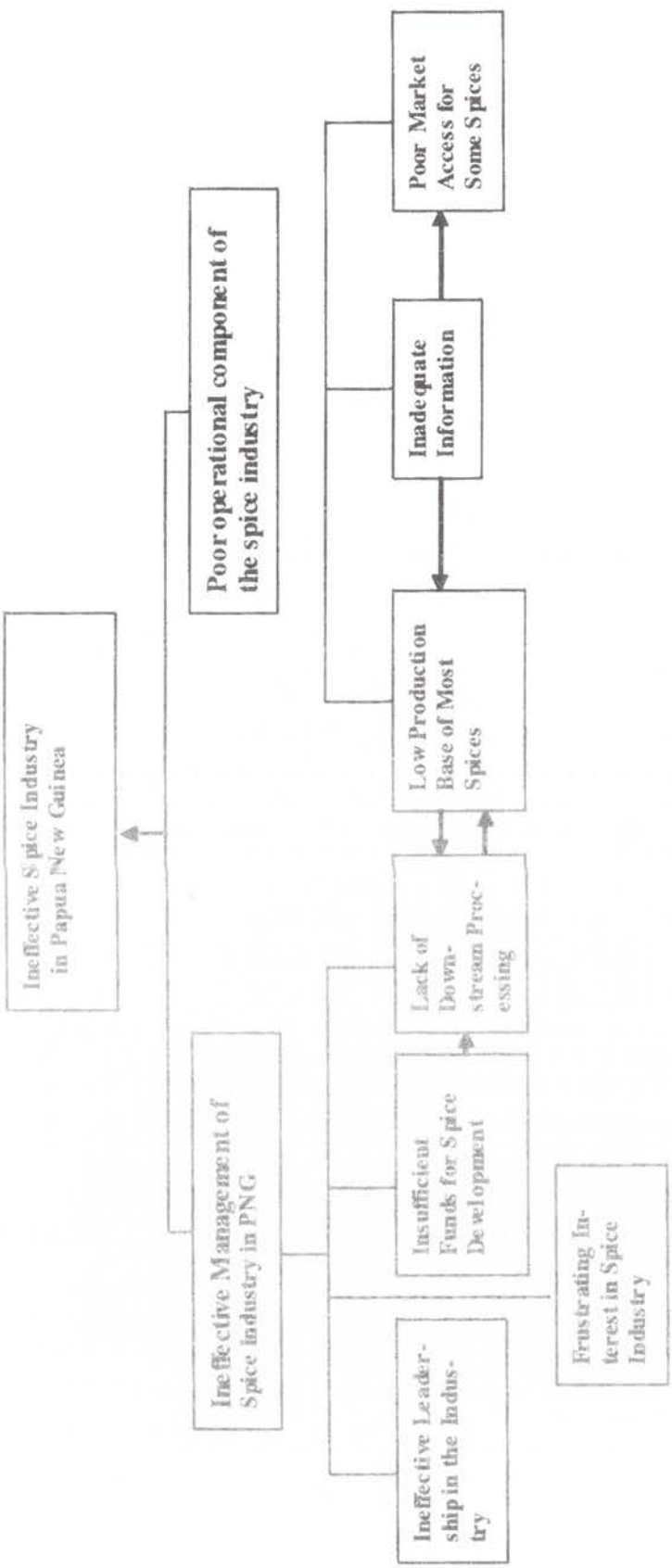


Fig. 1 Constraints Analysis of the Spice Industry in Papua New Guinea

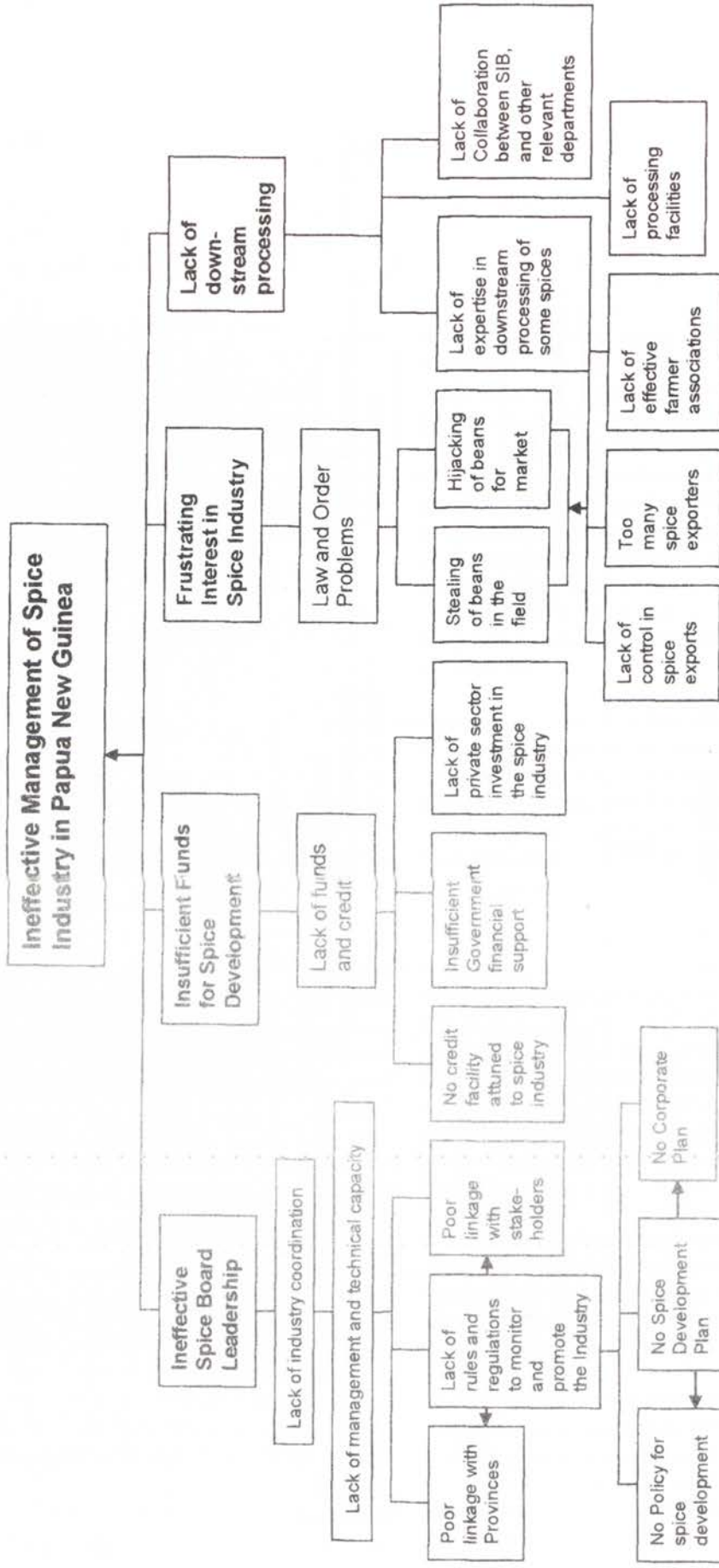
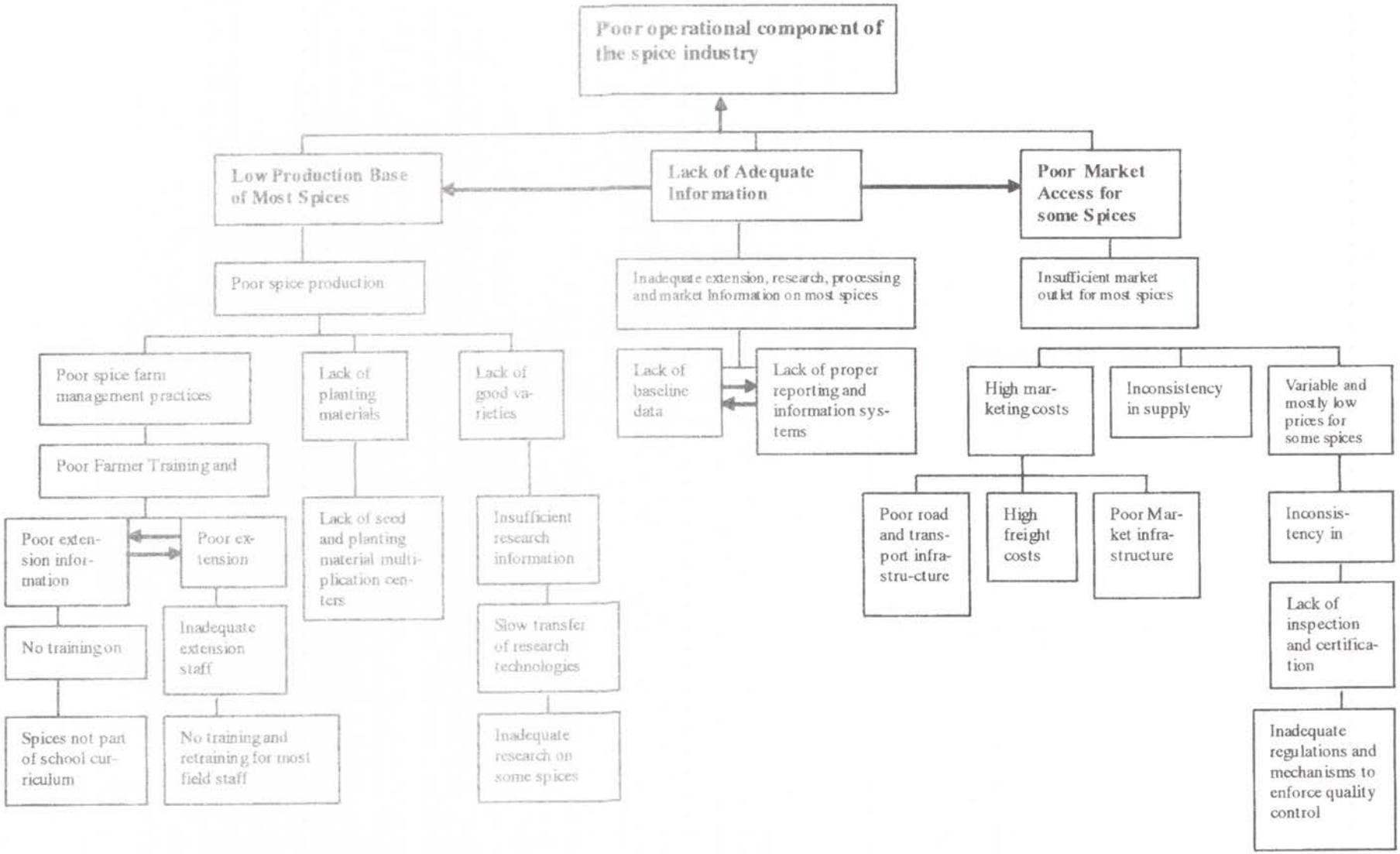


Fig 2. Management Constraints of the Spice Industry in Papua New Guinea

Fig. 3. Operational Constraints of the Spice Industry in Papua New Guinea



3. Results /Objective Analysis of the PNG Spice Industry.

The identified constraints in the Spice Industry, which are factors contributing to failures or stagnation in the industry, must be addressed, for the Industry to make progress, as discussed below;

An **Effective Spice Industry in Papua New Guinea** would result from **effective management** and **adequate operational components [Fig 4]. Since both components are inter-linked, the optimum operation of each sub - component is essential for the overall success of the industry.**

3.1. Effective Management Component would result from; **Effective Spice Board Leadership, Adequate Funding, Stimulating Interests and Promotion of Down Stream Processing [Fig. 5],** further discussed below;

3.1.1. Effective spice board leadership in the industry would result from **management and technical capacity building** and **improved coordination of the industry,** Other factors are; the formulation of **Spice Development Plans** including **Policy** and **Corporate plan**. With **rules and regulation to regulate and guide the industry, linkages with Provinces and Stakeholders would improve.** All these subsequently would lead to **Improved Coordination in the Industry** and therefore promote **Effective Spice Board Leadership [Fig 6].**

3.1.2. Adequate funds for spice development, Adequate Government financial support to the spice industry, increased private sector investment as well as **availability of credit attuned to the spice industry** would **improve access to funds and credit** thus facilitating **adequate funds for spice industry development.**

3.1.3. Frustrating interests in the industry. The **reduction in stealing of spice beans in the field** as well as **on the way to market through hijacking** would result from **better control in spice exports, reduction in and monitoring of export licenses/ exporters** and **effective farmer associations or cooperatives in producing areas.** These would lead to **less law and order problems** and therefore **stimulate interest in the spice industry** [by producers and marketing agents].

3.1.4. Promotion of down stream processing in the spice industry would result from increased collaboration between SIB and relevant departments [such as the Department of Trade and Industry, and the Private sector], promotion of **adequate expertise in down stream processing of more spices** and **facilitating for needed processing facilities** [and promoting increased production base under operational component].

3.2. Improved Operational Component results from; **Increased production base for most spices** [also influenced by promotion of down stream processing], **adequate information to guide the industry** and **improved market access for more spices [Fig. 6]**, as discussed below;

3.2.1. Increased production base for most spices [relates to promotion of down stream processing], results from **better spice production systems**, which in turn is a result of **better spice farm management practices, access to good varieties and availability of planting materials.**

Better farm management practices would result from **better farmer training,** due to **improved extension information and improved extension services. Improved extension information** results from **adequate extension services, training of farmers on spices and spices being part of the curriculum in schools. Adequate extension service** results from **adequate extension staff performances** due to **training and re-training of extension staff.**

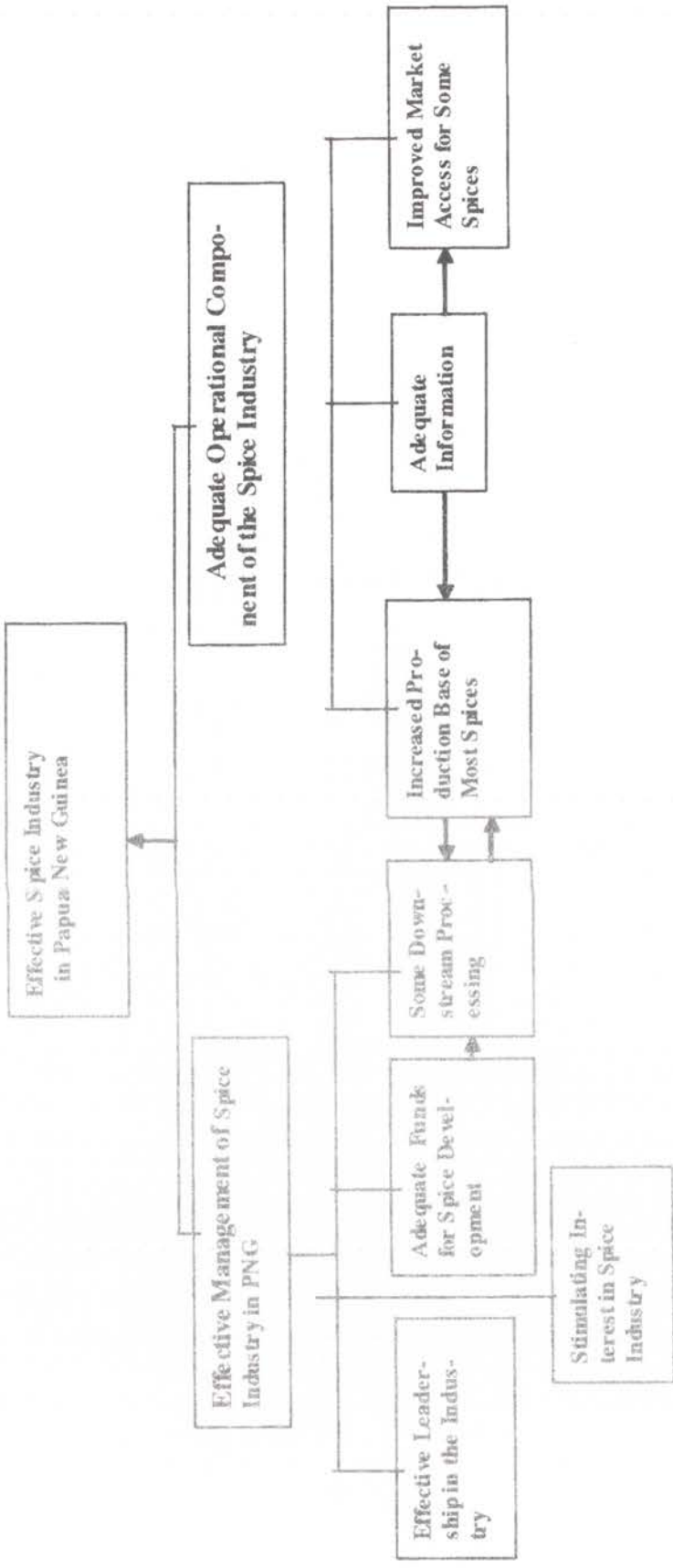
The availability of planting materials results from; the **establishment and promotion of seed and planting material multiplication centers.** While **availability of good varieties is due to adequate research on most spices,** which also results from increased **transfer of research technologies and sufficient research information** to the population.

3.2.2. Adequate information to guide the industry, Adequate reporting and information systems and **availability of baseline data** in the Spice industry would result in **adequate extension, research, processing and market information on most spices**. This in turn would lead to **availability of adequate information** [and also directly contributes towards the **increased production base of most spices** as well as **improved market access for most spices**].

3.2.3. Improved market access for most of the spices would result from **sufficient market outlet for most spices,** which is a consequence of **affordable marketing costs, consistency in supply** and **better prices for most spices.**

The affordable marketing costs would result from **improved road, transport and marketing infrastructure and lower freight costs** in major spice producing areas. **Better prices for most spices** would result from **consistency in quality,**

Fig. 4. Results Analysis of the Spice Industry in Papua New Guinea



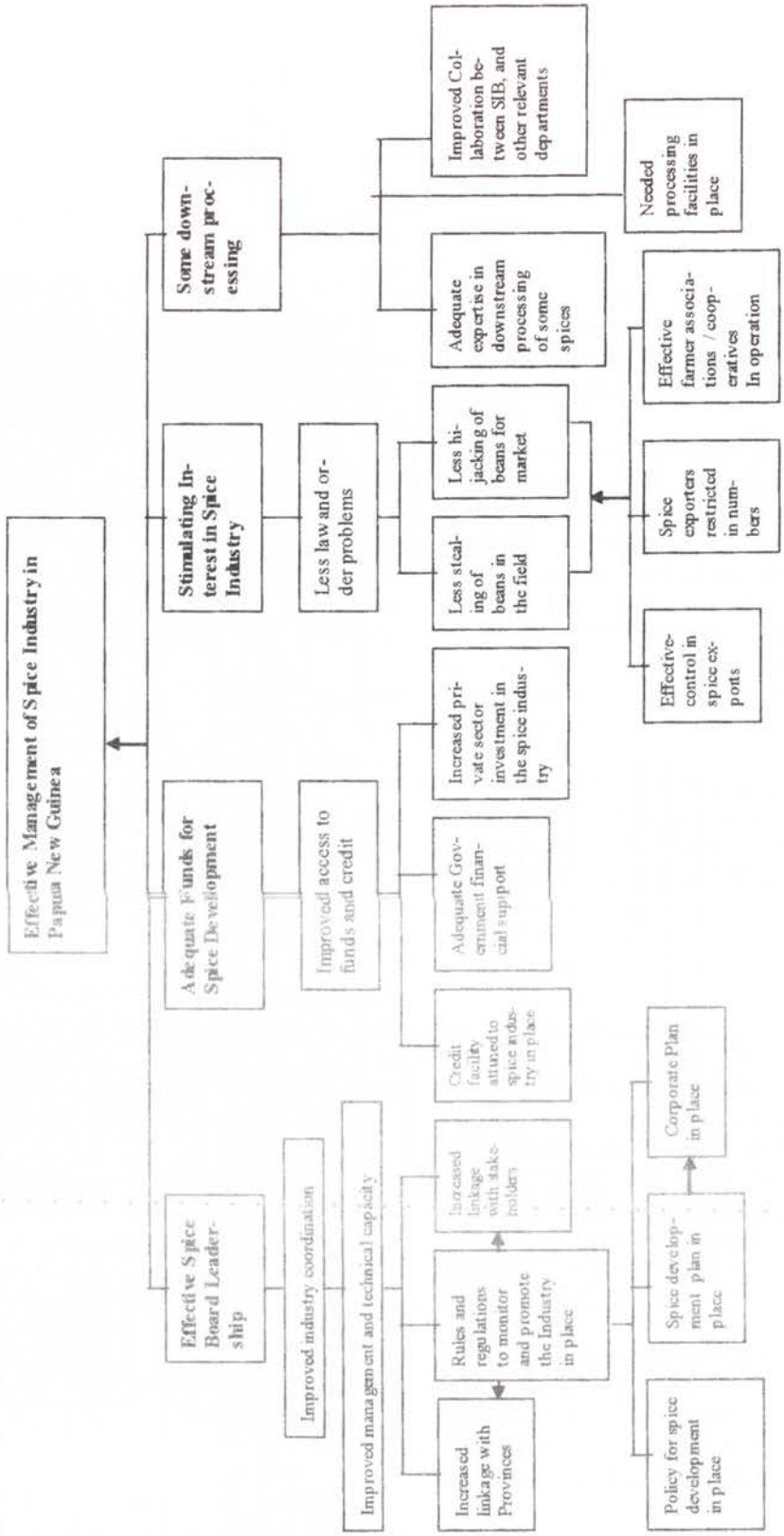


Fig 5. Management Results of the Spice Industry in Papua New Guinea

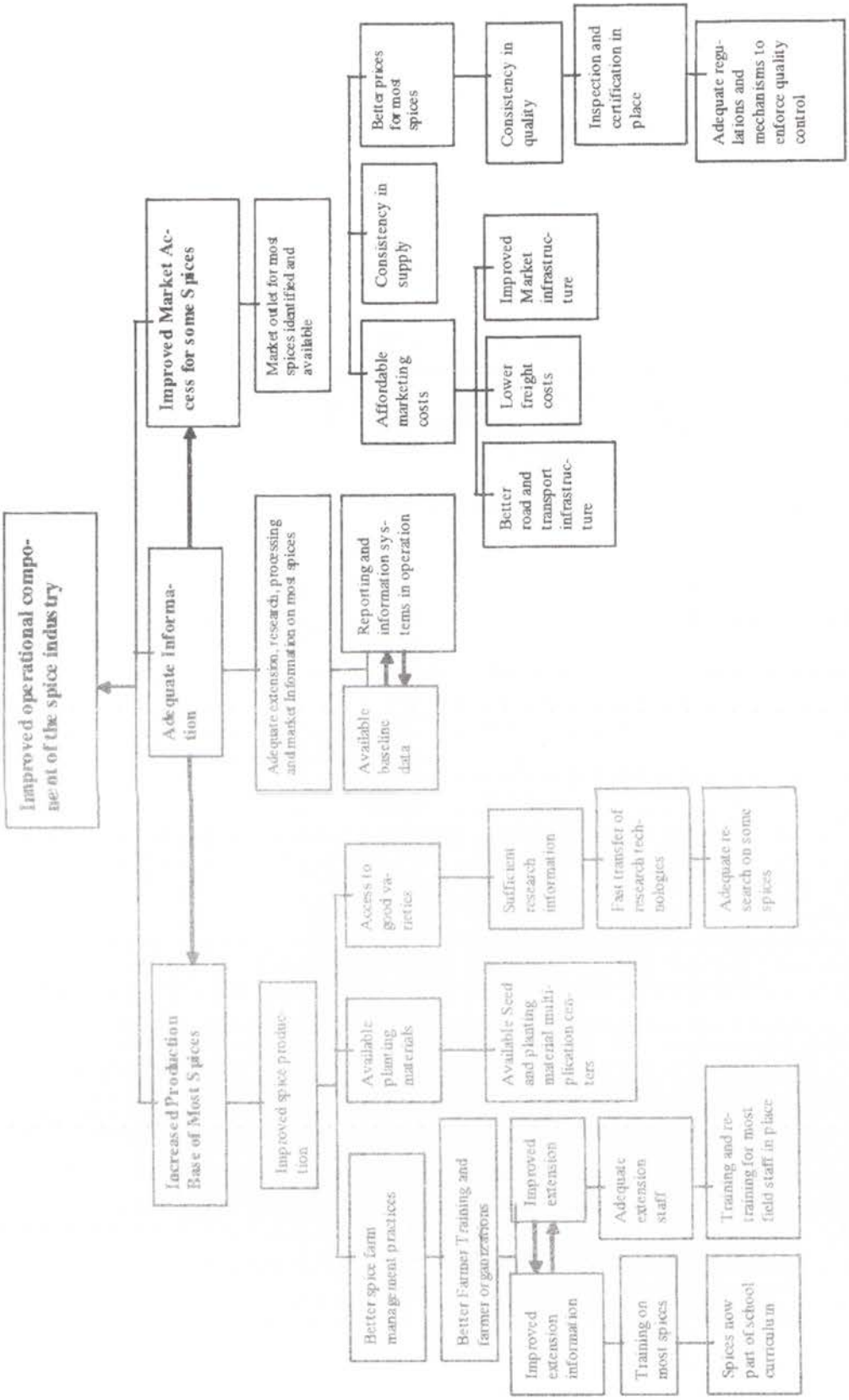


Fig. 6. Operational Results of the Spice Industry in Papua New Guinea

which in turn is a result of **adequate inspection and certification** due to **adequate regulations and mechanisms to enforce quality control.**

CONCLUSIONS

The PNG Spice Industry could be revitalized, if issues raised in this report are addressed. It has taken over 40 years and the loss of vanilla production base in Madagascar; and the corresponding hike in world vanilla prices for the PNG Spice Industry to begin showing some significant financial gains. It is expected that, the high vanilla export prices may be short-lived. Thus PNG Spice Industry would need to make significant efforts in terms of economic and quality spice production for spice produce/products from PNG to remain competitive in the World Market. We believe that, by implementing the suggestions in this report, the PNG Spice Industry would be taking great strides toward the promotion of economic, quality and competitive spice industry, for the long term sustainability and benefit to participants in the spice industry.

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