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DEVELOPMENT OF A VALUE-DRIVEN BUSH FOODS INDUSTRY CHAIN THAT REWARDS ABORIGINAL PEOPLE

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ABSTRACT

Commercial activity for Australian bush foods industry is derived from uniquely Australian flora and fauna and is founded primarily on traditional Aboriginal knowledge of the collection, preparation and uses of the resources. Many of the plants used for commercial activity are sourced from the Australian rangelands and yet few Aboriginal people have engaged successfully in market-based commercial ventures. This paper examines a critical aspect of the organisation of the commercial activity, *the value chain*. We focus on desert Australia and the participation and equity position of Aboriginal people.

INTRODUCTION

The Australian bush foods industry comprises products derived from uniquely Australian flora and fauna. Currently, the industry is small and while no consolidated data are available, estimates in size range from \$5m for native foods only through to a recent estimate from Primary Industries and Resources SA of \$16m per annum. The industry is fragmented and characterised by small to medium enterprises operating as sole traders or limited companies.

Supply through bush harvesting is still the predominant means of raw product input with six or more species continuing to be wild-collected. However, cultivation is expanding because of the demand for bush foods generally but also the need for continuity of supply.

Despite the development of the industry which has been largely reliant on Aboriginal knowledge, Aboriginal participation in the industry is currently marginal and the predominant involvement is in the supply of raw product through wild harvest.

Bush tomatoes (*Solanum centrale*) are a high demand fruit, currently sourced largely through wild harvest from desert Australia. The fruit is used in a variety of ways as a dried spice, in dipping sauces, chutneys and relishes, and as a seasoning for white and red meats. Annually, approximately 4-10 tonnes of fruit are traded for commercial use, largely dependent upon seasonal conditions.

Market demand for bush tomatoes is increasing. Supply however, is variable and as one of several species still wild collected from the central Australian desert, is subject to the vagaries of climate variability and local conditions. This has created a series of 'boom and bust' cycles for the downstream end of the chain and consequently a lack of market and investor confidence. Market caution is thus hindering further growth and development of the industry as a whole for this and other wild-harvested species.

The emphasis in this paper is on a value chain approach to examining the 'bush to bottle' production and distribution cycle of the product in terms of developing Desert Knowledge CRC research in this area. A key reason for this approach is so that the research mimics the practice of agri-food chains.

SUPPLY AND VALUE CHAINS

Supply and value chains are vertically integrated, strategic alliances between a series of independent businesses that have come together as a group to more efficiently capitalise on specific market

opportunities (Cox 1999). The goal of a supply/value chain is to optimise performance in that industry using the combined expertise and abilities of the members of the chain. Successful chains depend on integration, coordination, communication and cooperation between partners with the traditional measure of success being the return on investment. (O’Keefe 1998; Boehlje 1999).

Bush tomatoes are amongst a wide range of wild / native bush plants which comprise the Australian bush foods industry. They can thus be thought of as part of the agri-food industry sector. The agri-food sector is a large, multifaceted industry sector that exists worldwide, and involves a range of businesses that create industry specific (e.g. grains, meat, fruit and vegetables, etc.) agri-industry chains, that often exist across international boundaries. The businesses involved in such chains tend to deal in low margin commodities where competitive market forces have typically resulted in the cost of production being very close to the value created, thus leaving relatively thin profit margins (Boehlje 1999). Additionally, production is directly affected by climate and the resulting uncertain weather conditions which very often results in a variable supply of the product. Ensuring constant volume, high quality product at the right time and price is thus a key business consideration and involves rigorous supply chain management (SCM) both within the company and between businesses in the industry supply chain (Dunne 2001; Bryceson and Kandampully 2004).

Many chains have a focus on minimising cost per unit of value added and maximising returns. In the bush foods industry this is a necessary principle if Aboriginal people are to achieve real benefits and/or livelihoods. However, given the inter-cultural placement of the bush tomato value chain, there is a need to include the non-market social and cultural considerations. Identifying and achieving the right balance between the economic and social factors is critical and we argue that this balance may be different for different chains in the agri-food sector, dependent on the environment and context in which the chain is situated.

DISCUSSION

The conventional view of a successful value chain is that it incorporates competitive advantage (Porter, 1985) with some acknowledgement and consideration of social factors such as trust, satisfaction, appropriate power structures, commitment, communication, relationship-specific investment and strong personal relationships (Batt, 2003). These social factors relate to both vertical and horizontal connections within the chain (Lazzarini et al 2007). In the case of the bush tomato chain, little supply chain management is evident, particularly at the upstream end of the chain. A number of factors influence this state, including lack of information flow to and from the major suppliers in the chain, i.e. the harvesters, regional control of resource flows exercised by the consolidators and heavy reliance on wild harvested supply by downstream processors, distributors and retailers. There are multiple entities along the supply chain and little evidence exists to suggest integration of these entities for competitive advantage, nor the development of the social factors identified above. We argue that the social elements are foundational to developing the economic efficiencies in this chain, because information asymmetry and the operation of the chain in an inter-cultural context creates power imbalances which marginalise some participants, particularly at the upstream end of the chain. For example, DKCRC has undertaken post-harvest pest management research. However, dissemination of that information to critical links in the chain is difficult where appropriate communication mechanisms to facilitate information and knowledge transfer do not exist. Additionally, access at the upstream end of the chain to market information will be critical to full participation in the industry, e.g. post-harvest handling techniques, industry standards and current market prices. Developing branding and marketing strategies which reflect the positives for wild-harvested supply e.g. product which can be marketed as clean, green, organic, hand picked, regionally provenanced and ‘authentic’ will be heavily dependent on access to market knowledge and information for the positioning of such strategies. Researchers are working with bush-harvesters to document the socio-cultural values of bush tomato, which will contribute to the development of a differentiated product with attributes which are valued by discerning consumers in particular niche market sectors.

Addressing information asymmetry requires an examination of the current relationships, both vertical and horizontal in the chain. Lazzarini et al (2007) argue that understanding inter-organisational

relationships requires an examination of inter-dependencies that exist between them and should be the first analytical step in the process. They argue further that a netchain perspective (understanding both the vertical and horizontal relationships in a chain) is critical in the formulation of inter-organisational strategies which create competitive advantage and which leads to the development of successful, sustainable industries and in this case, returns to desert people. The current situation of information asymmetry suggests power relations which may not be conducive to creating conditions where value-adding at each link in the chain is possible and is contributing to situations where competition within the chain is decreasing its efficiency. This is important to understand and ameliorate because without the elements described by Batt (2003), the chain may not be sustainable, or may develop frequent changes in structure. The development of capacity building and knowledge transfer processes will contribute to creating more effective power relationships in the chain. Achieving an appropriate policy around phyto-sanitary regimes is also important. Current research is targeting whole of industry considerations, such as the development of policy papers related to standards and industry certification. Industry standards are largely non-existent, but are critical to developing a robust industry and market confidence. Equally, the development of certification related to authenticity and which enables consumers to confidently purchase product on the basis of genuine benefit to Aboriginal industry participants and regional authenticity is also important.

In order to work towards developing the underpinning human elements of the value chain, we are undertaking two critical pieces of foundational work. The first of these is 'Walking the Chain.' The 'walking the chain' concept has been used in Europe as a means of reconnecting all elements of food chains. This work is addressing the vertical relationships in the bush tomato chain. Harvesters and producers of bush tomato will undertake a physical journey along the bush tomato value chain; enabling them to experience what happens to 'their' product at each step of the process and see where value is added and who benefits from it. Additionally, other sectors of the chain will be invited to participate at each step and to undertake a reciprocal visit to central Australia to gain a greater understanding of the values, cultural context and operating environment within which the producers operate.

A second activity – 'Hands Across the Desert' - is aimed at facilitating knowledge and information sharing between different Aboriginal groups currently engaged in the bush foods industry. This research addresses the horizontal relationships in the chain. One of the key issues expressed by Aboriginal industry participants is lack of knowledge and information about how others are participating and the nature of that participation. Some Aboriginal participants in the industry have developed enterprise models that fit cultural values and at the same time enable greater access to the industry and increased potential for greater economic return. In the Kimberley region of WA for example, Kakadu plum is being successfully commercially harvested by Aboriginal enterprises. A group of bush tomato harvesters from central Australia will visit these enterprises in WA. Examination of successful businesses and business models in this context will increase understanding of how to enhance the existing bush tomato value chains and more importantly, will capture the knowledge of how the human elements associated with successful value chain management have been developed in this inter-cultural context and the ways in which Aboriginal people are engaging with the market as equals.

Supply constraints that see the industry based on significant seasonal variation in supply will not be tolerated by modern agri-food firms (retailers and food service providers) who spend considerable amounts of money building efficient chains and customer expectations through advertising and marketing. There is a need therefore to understand the agronomy of the plant. This process is best done with Aboriginal people as they can combine their traditional knowledge with the science, thereby creating 'desert knowledge.' Research trials of horticultural production of bush tomato in central Australia are underway. One of these trials is investigating and documenting both the horticultural production of the species and the economic viability of doing this commercially. Importantly, closely linked to this are participatory trials which are occurring on Aboriginal communities and homeland settlements thereby ensuring that outputs from the trials can be taken up by community growers. Linked to horticultural production is the genetic provenancing of *S. centrale*. Genetic provenancing is

an important first-step in developing Plant Breeding Rights (PBR). This work involves species wide genetic resource assessment, including intensive sampling from the species' range, incorporating genetic, ecological, plant variety and plant identification traits. Establishing PBR is an important means of ensuring benefit-sharing for Aboriginal growers. However, we see that the foundation element of this is developing an understanding of the cultural significance and importance of the plant and being able to tie this to genetic characteristics. This leads to marketing advantage of an authentic, culturally attached product, but also ensures that external parties cannot appropriate rights as both the culture and science are linked. A desirable output is differentiated products in niche markets

CONCLUSION

Creating value chains which enhance industry development, particularly in low-margin agri-food industries is highly desirable. The greater participation of Aboriginal people in the bush foods industry which has been heavily reliant on Aboriginal knowledge systems is also desirable, as a means of generating greater economic independence for desert Aboriginal Australians in an area which is likely to be culturally appropriate and which accommodates traditional values. Research which targets both of these goals and which is undertaken in a participatory manner is much more likely to be successful in generating livelihood outcomes for Aboriginal people than other approaches. By focusing on the value chain, knowledge gaps related to both technical questions and social elements of the 'bush to bottle' bush tomato production cycle can be addressed. Of critical importance is ensuring that communication and utilisation strategies are in place and that research, knowledge brokering and facilitation along with capacity building need to be interwoven in a way that builds a firm foundation for sustainable, viable desert participation in the bush foods industry. Taking a holistic, value chain approach is a way of achieving this.

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