

## ***Chapter 1: Introduction and Justification***

A traditional source of household income and sustenance in rural areas around the world is collection and marketing of non-timber forest products (NTFPs). These products include all biological materials other than timber which are collected from forests and used by people. Local, regional, national, and international trade of NTFPs can significantly contribute to community and household economies. As a result, marketable NTFPs can provide an important means for economic growth and sustainable forest management in local communities. However, little is known about NTFP collection, utilization, and marketing in many regions of the world despite their great potential to positively effect communities and households. This missing knowledge is critical. Increasing pressure is placed on forests to produce as communities seek ways to economically benefit from their natural resources. Basic information regarding NTFPs is necessary for communities to make optimal use of their natural resource. Much has been studied of timber productivity, however, NTFPs have not been studied up to this point despite their apparent high value and diversity. Aspects of NTFP trade must be examined before NTFPs can be developed as a means to economic growth and forest resource conservation (Fox 1994).

This research is an exploratory and qualitative study on NTFP marketing in southwest Virginia, a site selected due to its rich NTFP resources, poor economic conditions, and little documented knowledge about NTFPs and their markets. Research on NTFP markets in southwest Virginia has become more important as demand for these products rapidly increases in North America and Europe (Mater 1993). Southwest Virginia has potential to meet these demands from its forest resources rich in economically important NTFPs. Knowledge of marketing systems is vital to ensure optimal local benefits from NTFP trade. Studies should be conducted that analyze marketing systems in the context of the unique natural, social, and economic conditions of the region and seek to clarify marketing chains and their impacts on market players. This research will provide information vital to economic growth that can potentially result from NTFP trade. The results of this research will be valuable to meeting local economic development and forest stewardship objectives

in southwest Virginia. It will also be a model for studies which can be done in other parts of the world and will be a basis for comparison with the results of these potential studies. This research will be a valuable foundation for comparing different NTFP marketing systems and making conclusions regarding their efficiency and equity.

The goal of this research is to study marketing of selected non-timber forest products (NTFPs) in southwest Virginia. Associated issues include collection and its role in household and community economies, marketing systems and the roles of market players in these systems, the conditions of southwest Virginia in which NTFP marketing occurs, and the linkages among NTFPs, market players, and local economic conditions. These issues will be addressed by meeting four objectives of the research that are to i) study the natural, social, and economic context in southwest Virginia; ii) describe collection and use of selected NTFPs; iv) document elements of NTFP marketing: products, pricing, promotion, and distribution; and v) analyze the interactions among NTFPs, their marketing systems, and market players with regards to context in southwest Virginia. This study examines market players in a limited sense in that it only includes those individuals who play active roles in NTFP marketing chains. The interest of this study is not land ownership and therefore, land owners as players in the marketing chain are not studied.

The first section of this thesis will lay the foundation for the research. First, a section on background (chapter 2) defines NTFPs and describes NTFP collection as a corporate or household-based system, the economic value of NTFPs in the United States and Virginia, and several characteristics of southwest Virginia. The literature review in chapter 3 explores three main topics: economic impact of NTFPs on household and community income, NTFP marketing systems, and research design proven successful in previous NTFP studies. The results and methodology of several studies are summarized in the literature review to provide a foundation for the research in southwest Virginia. A review of chosen research methodologies is given in chapter 4 and is related to the literature on research design reviewed in the previous chapter.

Data was collected between January and September 1997. First, secondary data on the natural, social, and economic conditions of southwest Virginia were compiled and are presented in chapter 5. Next, field work was conducted to collect primary data on selected NTFP categories and meet objectives two and three. Results of the field work are presented and discussed for each selected NTFP category beginning with NTFP crafts (chapter 6). Two craft items are discussed in detail, grapevine products and birdhouses. Chapter 7 presents the results and discussion for medicinal and herbal products, chapter 8 for specialty wood products, and chapter 9 for edible products. Results and discussion for NTFP crafts, medicinal and herbal, and specialty wood products are organized according to aspects of marketing: products, value addition and market outlets, pricing, promotion, distribution, and marketing chain. The results and discussion for edible forest products are organized differently since these products are not commonly marketed in southwest Virginia and no marketing information or market players were found. The chapter on edible products is a presentation of secondary data found only in the literature and includes products important in regions outside of southwest Virginia, but which may have potential as cultivated products within the central Appalachian region.

NTFP categories were selected based on what was expected to be a marketable item which economically benefits market players in southwest Virginia. The four categories chosen represent NTFPs which are important in other parts of the country and world and their importance in southwest Virginia was anticipated before the onset of the research. Although this research is of NTFPs, specialty wood products are included as one of the product categories. Specialty wood products are often not considered an NTFP since they involve timber use. However, they are included in this research because preliminary investigation has shown them to be a significant forest product and they can be considered in the category of special forest product (SFP) which includes NTFPs and wood products other than timber (Mater 1993).

The chapters on results for each NTFP category must be interpreted to reveal

interrelationships among NTFPs, their marketing systems, and market players (objective four). This interpretation is presented in chapter 10. It begins with a summary of several variables important to NTFPs and their market players. This summary enables the subsequent analysis of linkages between NTFP raw material and final product, and between type of market player and motive for involvement in NTFP trade. Comparisons are made between market players and elements of marketing to identify important issues in NTFP marketing systems. Conclusions in chapter 11 are then based upon the interrelationships and issues identified during interpretation of primary research results. Conclusions also explain several opportunities for local level NTFP marketing based on the research findings and suggests further study to fill remaining gaps in information.

## ***Chapter 2: Background***

Non-timber forest products (NTFPs), also called special forest products (Thomas and Schumann 1993), non-wood forest products (Food and Agriculture Organization 1997), or minor forest products (Malhotra and Poffenberger 1989), are economically and environmentally important worldwide. They include all non-timber biological materials extracted from forests for human use (Fox 1994). Examples of NTFPs are fruits and berries, nuts, spices, medicinal extracts, oils, gums, resins, insect and animal products, charcoal, cones, seeds, smokewood and flavorwood, greenery and other floral products, honey, mushrooms, specialty wood products, syrup, weaving and dyeing materials, aromatics, and recreation (Thomas and Schumann 1993). Products such as these are vital sources of income and sustenance for many forest-based communities around the world. Appalachia is one region of the United States in which residents rely on NTFPs as both traditional and functional means of livelihood.

NTFPs can be further defined by classification into major categories. An evaluation of market opportunities for NTFPs in the state of Minnesota established six major categories of NTFPs: cones, decorative greenery, florals and ornamentals, herbs and medicinals, decorative woods, and smokewoods/flavorwoods (Mater 1993). The NTFP industry in the Northern Rockies recognizes five categories: floral greens, Christmas ornamentals, wild edible mushrooms, other edibles and medicinals, and Pacific Yew (Schlosser, Blatner, and Chapman 1995). The United States Forest Service adheres to five general categories: floral or decorative, medicinal, herbal, edible, and specialty wood products (Dix 1996).

The ancient practice of extracting NTFPs, leaving forests structurally and functionally intact, is a possible means to reconcile economic and environmental concerns of the forest (Nepstad and Schwartzman 1992). In fact, increasing sales of NTFPs can enhance the value of the forest, encourage conservation, and improve forest people's well-being (Padoch 1992). Non-timber forest products (NTFPs) have economic and social values

which surpass even timber products in some areas (Padoch 1992 and Peters, Gentry, and Mendelsohn 1989). In addition, market value and demand for NTFPs has grown considerably in the past ten to fifteen years while declining revenues from timber in some areas has lead foresters to consider the values of a wide variety of commodities other than timber (Savage 1995). It has been said of some forest regions, “the sustainable exploitation of non-wood forest resources is the most immediate and profitable method for integrating the use and conservation of forests” (Browder 1992:33 and Peters, Gentry, and Mendelsohn 1989).

NTFP collection and marketing is a traditional and cultural activity in many regions of the world. People who live in relatively remote areas traditionally rely on local forest products because they are more easily available and affordable than products manufactured in cities. For example, folk medicine is made by mixing natural products having health promoting properties, such as certain non-timber forest products. This type of treatment was practiced exclusively in remote, mountainous regions of Appalachia until the early 1900s (Cavender 1995). Even today, natural medicines derived from NTFPs are used throughout Appalachia and many other areas of the world.

NTFP categories typically fall into two types of collection classifications: corporate enterprise-based or traditional household-based (Browder 1992). Corporate enterprise-based systems involve private capital and sector involvement and usually are only worthwhile for large-scale extraction of a highly valuable NTFP (Browder 1992). Most notable is the case of the Amazon rubber boom of 1850 to 1920 which generated great private investment due to large foreign demand. (Weinstein 1983). A second example is taxol, a phytomedical compound extracted from Pacific Yew bark believed to be a cancer treatment (Savage 1995). As these examples show, corporate investment in NTFPs is significant when large quantities of a highly valuable NTFP can be marketed.

Two constraints effect the private sector’s role in NTFP trade. First, highly biodiverse areas such as southwest Virginia and tropical forests, inherently have high heterogeneity of

species. Therefore extraction of NTFPs is very labor intensive and costly for products which are numerous but scattered over large geographic areas because much time is required for collection (Browder 1992). Seemingly, the more heterogeneous are the products, the greater is the time, labor, and money required for collection. Volumes are smaller for wild collected products than plantation grown and marketing cooperatives may be necessary to meet demands (Everett 1996). A second constraint is that many NTFPs do not have sufficient markets to make their sale worthwhile or attract private investors (Browder 1992). It is important to seek new markets for potentially marketable NTFPs to capitalize on hidden opportunities. Perhaps with the increasing demand for natural, wild health products in North America, Europe, and Japan, many products which were previously only locally consumed will find expanded markets (Mater 1993)?

Conversely, the traditional household-based system of NTFP usage is widely practiced by rural households. These households depend on wild collected products for subsistence living or as a source of income. Household-based systems are the most common in isolated forested regions such as southwest Virginia and regions of the developing world, where people have traditionally utilized forest products to sustain the household. Examples are gathering fruits and berries for food and making medicine from forest plants. These people are typically dependent to some degree on large landowners, merchants, or private companies which determine prices and marketing opportunities for NTFPs (Browder 1992). Collectors are most often generalists and not specialists, using NTFPs as a supplement to other forms of generating income which include farming, wage employment, or other informal sector activity (Emery 1997 and Padoch 1992). It is rare that a household can derive all needed income from NTFP collection either in southwest Virginia or in the tropics. Even with diverse income sources, collectors often are in a low income bracket or live below the poverty level (Browder 1992).

However, as a whole the NTFP trade has high economic worth. The NTFP industry in the United States alone is valued very highly and grows rapidly each year. For example, United States exports of moss and lichen for commercial use was valued at \$14 million in

1995 (Vance 1996). The United States herbal market alone amounts to \$970 million and grows 13% to 15% annually while the worldwide market amounts to over \$60 billion (Goldberg 1996). Mater (1993) predicts that sales of medicinal herbs could reach \$5 billion by the year 2000, a huge increase from its value in 1995 of \$1.5 billion. A 1996 article in the New York Times (Goldberg 1996) states, "The market for forest products other than trees has mushroomed by nearly 20% annually over the last several years." Based on significant increases in market demand for NTFPs there is cause for developing forest management and marketing systems focused on valuable NTFPs.

One region of the United States in which NTFPs play an especially important role in household and community economies is southwest Virginia. The value of the NTFP industry in Virginia alone was \$35 million in 1995 and has grown 25% to 30% annually at times. This value is predicted to be greater than \$1.05 billion by the year 2000. The high value of Virginia's NTFPs can be credited to its high living biodiversity, typical of the Appalachian region. Appalachia is host to some of the areas of greatest living biodiversity in North America (Weinberg and Shackelford 1977) and the southwestern region of Virginia is representative of this biodiversity. The mountainous, deciduous forests of southwest Virginia contain one of the greatest varieties of NTFPs in the United States, enabling the region to be a major source of NTFPs (Nature Conservancy 1977).

Despite, southwest Virginia's potential to be a vital supplier to rapidly growing NTFP markets, lack of information about NTFPs is an obstacle to the optimization of their economic benefits. High unemployment and dependence upon the declining coal industry are factors which give urgency to the development of sustainable NTFP markets for capitalizing on the region's highly demanded products. Perhaps, communities of southwest Virginia have traditionally been heavily dependent on forest resources. NTFP trade can become highly beneficial to communities as marketing systems are developed which compliment local traditions of forest use. Strategies for resource management should be formulated based on NTFP market opportunities which sustain economic development and at the same time conserve forest resources. Consequently, southwest

Virginia can become a leader in the increasingly important NTFP trade on a national and international scale. The growing demand for NTFPs makes studies such as this of NTFP marketing systems important and timely (Padoch 1992).

Increased demand and expanded uses for NTFPs internationally have resulted in many studies on specific products and their biology. New product categories have been defined around the world and their collection analyzed in the context of sustainability and economic benefits. However, only several studies of NTFP marketing systems have been conducted in the United States and in other countries. These studies provide a framework for comparison with the results of this research in southwest Virginia. The following review provides information on the economic value of NTFPs, summarizes the results of previous NTFP marketing studies, and describes research design proven successful in studies similar to this study.

## ***Chapter 3: NTFPs in the Literature***

This literature review begins with an examination of the economic impact of NTFPs on households and communities followed by literature specifically pertaining to NTFP marketing. Results of several studies are summarized to provide a basis for comparison with the results obtained in southwest Virginia. The last portion of this chapter examines methodologies which have been used in previous NTFP marketing studies. This review of methodology is the basis for the research design explained in chapter 4.

### ***3.1 Economic Values of NTFPs***

Forests have been central to the existence of societies in most areas of the world where forests are found. Forests provide timber and non-timber forest products which are important sources of livelihood for households and communities, in addition to environmental benefits such as water and soil conservation and recreation (Nautiyal 1988). Economically, income from the forest sector has been quantified on a national level. Gross contribution to economic product in developing countries from the forest sector was estimated to be US\$100 billion in 1989 (Sharma 1992). Much of this estimate reflects timber products since timber values have been quantified and understood (Binkley and Dykstra 1987, McKillop and Wibe 1987, Barbier et al. 1994). However, NTFPs are vital to many forest-based communities and provide a source of income and subsistence living (Peters, Gentry, and Mendelsohn 1989). The first thorough study of the economic role of NTFPs was conducted by the International Tropical Timber Organization in 1988. (Panayotou and Ashton 1992).

Research conducted in India (Kant 1996) quantified the significant contribution of NTFPs to household income. The study showed that the percentage of total forest products income resulting from NTFPs varies between 50 and 95 percent (Kant 1996). This study further finds that NTFP returns are comparable with those of agriculture even when NTFP prices are low due to lack of competitive NTFP markets at the local level. Since most opportunity for value addition belongs to those who process NTFPs, opportunities to

increase NTFP returns to local people can be achieved by developing community-based processing industries, developing local technology for NTFP use, and improving marketing capacity of local people (Kant 1996).

Since 1990, research has been done comparing the economic value of managing a forest for NTFPs with timber and agricultural production (Peters, Gentry, and Mendelsohn 1989, Balick and Mendelsohn 1992, Von Hagen et al. 1996). The results have suggested that NTFPs may be the best economic opportunity for rural people and that agroforestry systems which incorporate NTFPs will be highly beneficial (Von Hagen et al. 1996). It follows that NTFP marketing systems can play an important role in optimizing economic potential (Newman and Hammett 1994). However, little is known about NTFP marketing systems and available knowledge points to their poor development, inefficiency, and inequity (Padoch 1992). These systems have only recently gained research attention which attempts to clarify and assess their roles in society.

Though NTFPs have always been important to the income earning potential and subsistence livelihood of people, most countries and states do not have uniform scientific data about these products or their markets (Von Hagen et al. 1996). This may be a result of the historic forest management mentality which focuses on large-scale resource extraction such as mining and timber harvesting (Everett 1996). As a result, NTFPs were left on the sideline portrayed as a less profitable industry. Focus on NTFP management was further hindered by NTFPs' inherent geographic fragmentation and lower dollar returns per labor time than timber products (Mater 1993). Though NTFPs have been ignored worldwide by many public land management plans, these products provide an important, and in some cases essential, means for household livelihood through market and nonmarket uses (Emery 1996).

### ***3.2 NTFP Marketing Systems***

Little is known about NTFP marketing and the functioning of local markets. Therefore, research on local and regional markets, marketing patterns, problems, and opportunities is both timely and important (Padoch 1992). Padoch (1992:42) confirms that “studies of local marketing are indispensable for sound conservation and development planning.” However, reasons exist why NTFP markets have been difficult to study. There are few official statistics on NTFP trade, and market transactions may be marginally legal mainly because laws may not be fully understood by traders. These transactions also can occur anywhere at anytime, making them hard to substantiate by a researcher. As a result, these opportunistic market players are hard to track down and reluctant to be interviewed for fear of government regulation and taxation (i.e If government finds out actual volumes collected and incomes generated, collector’s may be taxed or collection regulated at a greater level). Furthermore, intermediary market players are “notoriously rough subjects” to interview or observe (Padoch 1992). These difficulties are likely to be encountered in the research of southwest Virginia.

Some studies have overcome the difficulties in uncovering details of NTFP marketing systems. One such study was conducted in Nepal on NTFP marketing chains between Nepal and India (Edwards 1996). The Himalayan region of Nepal is the main source of a wide variety of NTFPs which are traded to India. The main markets are the traditional medicine and essential oils industries in India which buy NTFPs such as roots, branches, leaves, bark, stems, fruits, and seeds. This trade contributes US\$8.6 million per year to Nepal’s national economy, a value six times the value of Nepal’s official timber exports to India (Edwards 1996). This trade supports several hundred thousand workers. In addition, these workers may depend on the trade to supply over 50% of their household income (Edwards 1996).

The study revealed a marketing chain consisting of five levels between Nepali sources and final raw material markets in India. First, most harvesters trade NTFPs through a village trader. The relationship between these traders and their harvesters is traditionally one of

mutual trust and a “serious life-long commitment to each other and their families” (Edwards 1996:388). As a result, negotiations are cordial and easily concluded. Traders typically advance payments to the next intermediary as a way to secure business. In this way, most village traders “mortgage” their trade to certain roadhead traders, the main centers of market activity between porters and road transport. Each roadhead keeps close business links with up to fifteen village traders. These individuals are valuable to harvesters and village traders for providing credit, labor, storage, and market information, and absorbing risk.

Next in the market chain are traders located in the India border towns of Nepal's Terai region. These traders are the fewest in number and most economically powerful intermediaries. Terai traders have close cultural and business links to each other and throughout India. They redistribute NTFPs among themselves to most easily meet orders from Indian buyers. For example, if one trader has easy access to a certain buyer and needs a product, another trader may help by supplying the product. Lastly, NTFPs are shipped to Indian wholesale and commission agents of the same cultural group as Terai traders. Final Indian customers range from family wholesale and retail businesses to large industrialists. This example of an NTFP marketing system illustrates the various intermediaries and their functions. Perhaps, systems in Appalachia are similarly constructed and consist of intermediaries with similar functions.

A second example is a study on market chains for the aguaje fruit in Peru (Padoch 1992). It was found that most often the aguaje extractor sells his fruit in the home village and some enter the market chain through which the fruit arrives in city markets. The market chain both begins and ends in the nearest city, Iquitos. The first market transaction occurs with a large dealer or wholesaler, usually urban residents, who make contracts and advance payments to extractors in rural areas. Those contracted to obtain the product often subcontract others to harvest. It is the contractee's responsibility to see that the fruit gets to market quickly and in good condition. This individual arranges river transport of the fruit from rural areas to Iquitos either on his own boat or on a large cargo-

passenger ship. Despite contracts, much of the fruit is not bought by the person who initially requested it. Many people rush to the port when products arrive and if a better price is offered for the fruit the contractee is likely to sell the fruit. Some dealers have left the business because of the uncertainty in securing products.

In the aguaje trade, unreliable transport and communication make following quickly changing market conditions difficult. Some contractees send coded messages by broadcast radio, a practice that has made virtually all market information on the airways suspect. When fruit finally arrives in Iquitos it is displayed for sale in wholesale markets. As this example of the aguaje fruit shows, NTFPs can pass through many people on their way to markets including harvesters, contractors, shippers, carriers, wholesalers, retailers, and processors.

Everett (1996) has developed a set of characteristics for the NTFP trade in the Pacific Northwest based on research of local NTFP collection and markets. This region supports a thriving trade in floral greens, pine cones, medicinal/herbal products, and many other forest products. Her research studied many important aspects of NTFP marketing and results may correlate with other regions, such as southwest Virginia. First, the organization of market chains in the Pacific Northwest causes many NTFPs to leave communities as raw materials without value addition that could retain more profit for local gatherers and producers. Second, trade is controlled in the Pacific Northwest by nine urban-based, capital-intensive companies, whereas in previous decades many small producers and buyers interacted (Everett 1996).

A third characteristic is that boom and bust cycles are common. An example is that which occurred with taxol from Pacific Yew bark. The Pacific Northwest marketed great quantities of taxol in the early 1990s. However, within five years the industry had discovered cheaper sources in foreign countries and demand for Pacific yew bark crashed (Everett 1996). Fourth, Everett's research confirms that harvested products are often wasted and overexploited in the Pacific Northwest by harvest of immature products and

harvesting beyond the level at which the source plant can reproduce successfully. Harvesters in the region, who are often immigrants from Central America and southeast Asia, also tend to be exploited by overwork and underpayment. Finally, conflicts and communication barriers between ethnic groups and institutions in the Pacific Northwest and the government's inability to adequately manage NTFP resources are obstacles to effective marketing (Everett 1996).

The characteristics of NTFP trade in the Pacific Northwest show that marketing may not generate economic growth for local communities and market players. Padoch (1992) agrees that market expansion does not always increase the benefits to local people, and that more commonly, the outcome is a depleted resource, expropriated resource rights by powerful urban market players, exploitation of minorities, and typical boom and bust cycles. Thus, as NTFP markets continue to rapidly expand in North America, precautions must be taken to ensure the most optimal and fair use of resources.

Various efforts have been made to improve NTFP marketing systems by addressing their inefficiencies and inequities (Padoch 1992 and Everett 1996). For example, rural cooperatives have been established in India by non-government organizations and negotiations with the state Forest Department to help peasants market NTFPs which range from medicinal plants and oils to leaf plates (Kant 1997). For example, transportation is provided by some cooperatives to carry NTFPs from village collectors to markets and assistance given in ensuring that peasants receive fair prices. Several countries have protocols to inventory and value NTFP stocks, such as Sweden, Finland, Lithuania, Latvia, Estonia, Russia, and Poland (Von Hagen et al. 1996). In addition, regional reports from both the United Nations Food and Agriculture Organization and the European Union provide comparative information for some countries (Von Hagen et al. 1996). Still, information on NTFP ecology, market potential, and development of government and non-government institutional capacity for managing and marketing NTFPs will be required before NTFPs can become optimally profitable and balanced with the limits of the natural resource (Everett 1996).

NTFP marketing systems have evolved over centuries and are culturally rooted in the traditional practices of local people. Cultural aspects of the NTFP trade are important parts of NTFP marketing and vary around the world with each culture. Emery (1996) has conducted a study of the cultural basis of NTFP collection in Michigan's upper peninsula. Though not specifically oriented toward marketing, the study provides insight into the first level of the marketing chain, the collectors. Understanding the cultural foundation of NTFP trade among these market players is vital to addressing inequities to collectors in marketing systems.

Cultural issues include attitudes collectors have regarding the collection and utilization of products. Many NTFP collectors in Michigan's upper peninsula follow six norms for achieving sustainability: i) take only what is needed without damaging the forest; ii) maximize utilization and waste nothing; iii) gather selectively to leave stock for future growth; iv) protect sites from overharvest; v) rotate gathering on a geographical or chronological basis depending on site capability and plant biology; and vi) promote growth through harvest techniques or propagation (Emery 1997). These positive norms on the collector level may or may not be followed in other regions of the world. The norms differ dramatically from the NTFP trade characteristics in the Pacific northwest which has resulted in over-exploitation of land and human resources (Everett 1996). Marketing may have a powerful influence on the existence of norms leading to sustainable NTFP collection and/or the negative effects of NTFP trade in different parts of the world.

The socio-economic status of collectors, the first level in the marketing chain, is a point of concern in the consideration of possible changes in NTFP marketing systems. Some believe improvements should seek to avoid exploitation of collectors and provide optimal returns to local people. Throughout the world, NTFP collectors typically are the poorest and of the lowest social class of all NTFP market players (Padoch 1992). Collectors often collect NTFPs to supplement their income and take part in various income earning activities which may vary by season (Emery 1997). NTFP collectors are usually rural

dwellers whose standard of living is lower than that of market players in towns and cities. They are generalists rather than specialists and opportunistically find ways to earn income. In the worst cases, collectors are exploited by urban market players and receive little pay for the labor intensive activity of collecting (Weinberg and Shackelford 1977). Even local traders and intermediaries are not known to be wealthy (Browder 1992).

The poverty associated with NTFP collectors and traders brings to question whether the nature of NTFP trade is to their benefit or is simply a system which perpetuates poverty. Local collectors have little say in changing the NTFP market since regulation is largely out of their hands (Browder 1992). Prices, market opportunities, and value addition are regulated or performed by a string of intermediaries which forces local collectors to remain at the least profitable and most vulnerable level of production, provision of a raw material. “When the value of products accrues to intermediaries, extractivists remain poor regardless of the amount of wealth they generate” (Fearnside 1989:391). The large value of NTFPs being removed from forests does little to create job opportunities and alleviate poverty in many NTFP-dependent areas.

Also, relevant to marketing systems of NTFPs is the proportion of products brought to market as opposed to that consumed only in the household. In addition to cultural norms, Emery (1997) found that most products are in fact not marketed but consumed in the household. Next in frequency are barter and gift exchanges, which Emery (1997) has shown to be essential to the social networks of communities in the upper peninsula; third is sale of processed NTFPs and fourth, sale of raw materials. Emery concluded that the two non-market uses, household use and barter and gift exchanges, account for 64% of NTFP activity (Emery 1997). This may be the case in most developing countries and depressed regions of developed countries, such as southwest Virginia.

Lastly, policies regarding the collection of NTFPs will have impacts on marketing systems by affecting the quantity, location, and quality of products. Increasing harvest pressure and desire to develop new revenue sources from forest lands have caused the creation of

new policies to regulate NTFP collection. These policies can have important implications for local people's ability to market NTFPs. Most policies for government-owned land deal with harvesting permits, sales, leases, access guidelines, and compliance procedures (Savage 1995). In Appalachia, the United States Forest Service issues permits for collection of the most valuable NTFPs such as ginseng. Also, state and federal officials are becoming more aware of harvester status, since traditionally harvesters have no formal employment contract and therefore pay no taxes or social security on the income from NTFPs. Collection on private land is regulated by official legal seasons which dealers are required to comply with in buying NTFPs from collectors. Some NTFP companies in the Pacific northwest have opted to directly hire harvesters and require others to purchase a business license to purchase NTFPs legally. These companies have taken the initiative to educate their employees on contract specifications, permit systems, land ownership rights, and laws governing trucking of NTFPs (Savage 1995). One coal company in southwest Virginia gives out free permits for NTFP collection as a way to improve public relations.

Six policy recommendations were given in a study on market opportunities for NTFPs in the state of Minnesota (Mater 1993). The forests of Minnesota, like other biodiverse areas, offer a wide variety of NTFPs with many excellent market opportunities and high demand. These six recommendations were developed to help Minnesota gatherers better collect and market their products: i) coordination between loggers and gatherers to prevent waste or damage to NTFPs during logging; ii) coordination between industries to reduce waste; iii) agroforestry which incorporates NTFPs; iv) development of cooperatives to combine talents and skills of individual gatherers; v) value addition; and vi) research on the uses and processing of NTFPs to help produce more efficiently. These recommendations may or may not be applicable in other regions of NTFP collection and marketing.

The literature indicates that marketing systems of NTFPs involve many people, products, and underlying issues, such as sustainability, equity among market players, and demand trends. Economic value of NTFPs for forest-based households and communities can be

significant if value addition and marketing opportunities are developed (Kant 1997). A basis for developing these opportunities is a thorough understanding of present marketing systems and the functions of all market players. Several studies have described marketing systems in countries outside of the United States. However, study of marketing systems involving the roles of each market player has yet to be conducted in any location in the United States. As international demand increases for NTFPs originating from biodiverse and economically deprived locations, such as southwest Virginia, research is needed to provide understanding of the types of people involved in NTFP trade and the linkages among these market players. Currently, there is no such study in the United States. This research in southwest Virginia studies the marketing systems of NTFPs with special attention to the roles of individual market players.

### ***3.3 Research Methodologies***

Paramount to the success of this research is the selection of appropriate research methodology. This section describes research design most useful in studies of NTFP marketing systems and proper manners to carry out the chosen methodology. Research design described in this section has guided design and field work in southwest Virginia.

Studies of NTFP marketing often require an exploratory research design due to little previous knowledge of the subject. Exploratory research allows the important issues of a subject to emerge in the ensuing research instead of making preconceived determinations of issues. Typically, the less known about an area of research, the more exploratory should be the research design. In exploratory research, it is believed that the research will uncover unexpected information and therefore, no formal hypothesis may be developed in the onset of the research. As a result the course of study is highly flexible (Babbie 1995). Exploratory research designs are employed to view events through the perspective of the people being studied, build methodology for later use, and recommend opportunities for further research (Adams and Schvanedeldt 1991). Often, it is expected that an “emergent” relationship between theory and research will develop as research proceeds (Bouma and Atkinson 1995).

In addition to being exploratory, methodology for NTFP studies are often qualitative. Richards (1997) points out in a study of Native American use of mushrooms that qualitative methodology is needed to obtain detailed data for a particular social group . Qualitative methodology was also warranted in this study due to the lack of previous information regarding tribal mushroom harvesting and the resultant lack of hypothesis. This design allows evidence to be collected and potential explanations to be eliminated during the study rather than before. Consequently, the qualitative design is consistent with the exploratory aspects of the study when little is previously known about the subject. In this research of NTFP marketing in southwest Virginia, qualitative and exploratory design is most useful for the same reasons Richards (1997) emphasizes. These reasons are little previous knowledge of the subject and site, lack of hypothesis, and need for detailed information about market players in southwest Virginia.

Within the exploratory framework, direct interviewing has proven to be the method most valuable in studies on NTFPs. Mater (1993:7) says of the study on Minnesota NTFP market opportunities, “Clearly the most important and critical information came from conducting direct interviews with harvesters, processors, brokers, and wholesalers

throughout the United States.” The research conducted by Mater (1993) is broad in scope in that it studied more NTFP categories than studied in southwest Virginia and utilized a survey approach rather than individual case studies. Her study was not directed only toward local trade but collected detailed data from market players all over the country. Mater conducted over 130 telephone interviews with market players throughout the United States. Market players included collectors, producers, brokers, wholesalers, retailers, and processors. This identification of market players gives clues to market players likely to be encountered in southwest Virginia.

Another NTFP study which utilizes an exploratory design of direct interviewing is research conducted in Michigan’s Upper Peninsula on NTFP gatherers and the concept of livelihood diversity (Emery 1996). The site was chosen due to the high unemployment rate and low per capita personal incomes. Southwest Virginia likewise is a region of great poverty relative to the rest of the state. Due to the economic conditions of the site, Emery (1996) assumed that the forests serve vital livelihood functions and that NTFP collection would be significant. Only collectors were interviewed in this study, having a variety of ages, gender, ethnicity, and origins. The study in southwest Virginia will include not only collectors, but all levels in the marketing chain, because one of its objectives is to describe the entire marketing chain which includes all market player levels. Like Emery’s study (1996) market players will be chosen for interview without discrimination based on age, gender, ethnicity, or origin. Also, southwest Virginia was chosen as the study site for similar reasons that Emery chose Michigan's Upper Peninsula: poor economic conditions and heavy dependence on forest resources (Emery 1997).

Interviews in social science research are commonly organized as case studies or surveys. The case study is an in-depth, comprehensive assessment of a group of factors by focusing on a small number of cases (Babbie 1995). Surveys are most commonly used in social science research and gather data from a large population through the use of such methods as questionnaires, interviews, or telephone surveys. The emphasis is not on individual behavior or characteristics, but on a generalized profile derived from all cases selected by

a sampling procedure (Leedy 1997). The research in southwest Virginia utilizes case study interviews to collect data rather than surveys since detailed information about market players in southwest Virginia is more useful than a generalized profile.

Exploratory studies which involve direct interviewing inherently require a period of field research, where the researcher is immersed in the natural events being studied. Field research involves a thorough and systematic collection, classification, and reporting of events. Although there is no standardized operating procedure for fieldwork, it is more than simply a journalistic account of a situation. The work begins with general notions and tentative hypothesis and often searches for “negative cases”, or phenomena which don’t fit (Babbie 1995 and Williamson et al. 1982). Propositions of hypothesis and theories are formulated as fieldwork proceeds through four steps that often occur simultaneously: i) selecting and clarifying the issue and site, ii) gaining access, iii) taking a role, and iv) data collection.

An important step in site selection is choosing the best sample and sample size to study within the site. Sample size depends on desired precision, accuracy, and homogeneity within the population. The more homogeneous is the population, the smaller can be the size of the sample (Sudman 1976). Richards (1997), in her study of Native American use of mushrooms, used both purposeful and snowball sampling. Purposeful sampling is a nonrandom procedure of selecting informants out of a population for having certain characteristics such as ease of access or representability. Snowball sampling also nonrandomly identifies informants by reference from another informant (Alan 1962).

Gaining access to the research site and obtaining reliable data are dependent on the role taken by the researcher and resultant rapport between researcher and informant. Potential roles lie along a continuum from complete observer to complete participant, differing in the level of intrusion (Adams and Schvanedeldt 1991). A complete observer remains detached from the situation under study and examines situations from a concealed observation vantage point. Conversely, the complete participant becomes behaviorally

and emotionally involved in the situation. The goal of the participant role is to develop relationships and trust while causing as little disruption as possible. This role is often assumed when the informants consider the sharing of their information threatening (i.e. economic loss due to telling secrets such as harvest site or personal information such as annual income) or it is highly involved with the ego of informants (Babbie 1995). Research of NTFPs which involves questions of income or competition must be sensitive to the confidentiality of interviews.

Choosing a role must also take into account the characteristics which informants attach to the researcher, such as race, ethnicity, physical appearance, and gender. These factors may influence the validity of the findings. NTFP collection often involves people of certain cultural identities different from those of scientific researchers. As a result, research should be designed to ameliorate any negative affects of researcher characteristics. These characteristics may determine how much participation the researcher wants and needs to complete the study. Liebow (1967) wrote “my color irrevocably and absolutely relegated me to the status of outsider” in his study on black men who hang out on street corners. In such cases, a role of greater participation helps to create rapport between researcher and informant. Gender identity has been noted to be crucial in the choice of role, in particular for women investigating certain situations. For example, if NTFP collection is traditionally a male activity, a female researcher should design her research to obtain reliable data from male informants by perhaps involving a male co-researcher.

Often, exploratory NTFP studies involve a role which tends toward participation. Researchers have defined guidelines for the participant roles assumed in social science research. First, honesty is the best policy and subjects should be given a standard explanation for the research, except in roles where deception is necessary. Initially, the researcher should have a passive role in fieldwork, especially in exploratory studies. The purpose of the passive role is to get the context of the environment under investigation and avoid making alienating mistakes due to lack of knowledge of customs and activities.

Furthermore in fieldwork, there should be no in-depth interviewing at first, although if the subject is willing to talk in detail, they should be encouraged. The researcher should not offer advice and should answer questions without assuming the role of expert. “Make it plain to people that they are the experts and that you are there to learn from them (Williamson et al. 1982:200).” The researcher should not allow subjects to force them into a certain role and should not become closely aligned with one group, otherwise, valuable contact with other groups may be prevented.

The direct interviewing method has shown to be the most useful in unknown settings because it customizes the interview to each respondent and setting (Emery 1996, Mater 1993, Pendleton 1992, and Richards 1997). For instance, questions are not specifically formalized and important issues guide interviews. Specific questions are formulated according to the progress of the interview, which gives the researcher the opportunity to probe information on hidden important topics or sensitive information from secretive individuals. In addition, it encourages respondents to give candid self-reports of the situation (Babbie 1995). Williamson et al. (1982) states that “the quality of the incipient relationship between interviewer and respondent is cornerstone to the direct interviewing method.”

The interviewer must provide introspective, candid responses to the subject to encourage the development of a positive relationship. A strict outline of questions to be asked is inappropriate due to the research’s exploratory nature and to avoid making a respondent uncomfortable (Richards 1997). Instead, a topic outline of specific issues to be discussed can include contingency questions in the event a subject will provide answers in such a way. The shape of the interview depends on the results of each ensuing question or topic covered (Maxwell 1996), but should begin with the easiest and least sensitive questions. Sometimes it is necessary to allow the respondent to take a “vacation” from the topic at hand by allowing him or her to talk about topics not of primary concern to the research.

The interviewer must be on the lookout for disinterest or fatigue, in which case the interview should end and be resumed later.

Reciprocity is the satisfaction of both the interviewer and respondent by the growing rapport and sharing of information. Often a promise of a copy of the final report will encourage the respondent to share more information (Molyneaux and Lane 1982).

Reciprocity is important in southwest Virginia due to the cultural belief in receiving something in exchange for information, a favor, or a product. During the interview, the researcher identifies implications, develops hypotheses, and formulates directions for the remainder of the interview and subsequent meetings.

Although the direct interview method is used widely in social science research, it has some inherent limitations. First, it is difficult to generalize about the population based on a small, non-probability sample and large errors are possible. The sample size is limited due to available time for data collection and data not easily transferred to quantitative statistical analysis. Second, direct interviews lack standardization, which makes them hard to replicate and lowers their validity. The goal is to ask each subject the right questions to get the most accurate and complete answer. However, answers from different subjects are hard to compare. At this stage of exploratory research in southwest Virginia, questions must be adjusted to fit the personalities of each informant which makes replication difficult. Future studies which build on the findings of the current study can focus more on standardizing the methods of research. Third, the results are vulnerable to interviewer bias. Fourth, there is no standard analysis procedure so that two researchers could arrive at completely different conclusions based on the same data.

The following chapter describes methodology used in this research of NTFP marketing systems in southwest Virginia. Information from the literature review on research design is central to methodology selected for this research. Methodology is derived from previous studies by Richards (1997) on Native American mushroom use, Emery (1996) on NTFP use in Michigan's Upper Peninsula, and Mater (1993) on NTFP collection and

marketing in Minnesota. The success of these previous studies using qualitative, exploratory designs which employ direct interviewing, has justified their use as models for the design in the research in southwest Virginia.

## ***Chapter 4: Methodology***

This research of NTFP markets in southwest Virginia is a pioneer study since little organized knowledge of the subject existed prior to this research. No previous study had been conducted despite apparent importance of NTFP trade (Becker 1997).

Consequently, this research is conducted in an exploratory manner that expects the relationship between theory and research to emerge as the study proceeds (Richards 1997). The research methodology is also designed qualitatively due to the lack of initial hypothesis and to provide detailed information about case studies of market players in southwest Virginia. Methodology for this study is modeled after several other studies of NTFPs, described in the previous literature review, which utilize exploratory, qualitative designs and direct interviews (Richards 1997, Emery 1996, Mater 1993).

This chapter on methodology is presented separately for each objective of the research in southwest Virginia: i) study the natural, social, and natural context in southwest Virginia; ii) describe collection and use of selected NTFPs; iii) document elements of NTFP marketing: products, pricing, promotion, and distribution; and iv) analyze the interrelationships among NTFPs, their marketing systems, and market players with regards to context in southwest Virginia. These four objectives require three different types of methodology. First, methodology for objective one is described. Second, methodology for objectives two and three are described in one section. Third, methodology for meeting objective four is described at the end of this chapter.

### ***4.1 Natural, Social, and Economic Context***

The context for marketing NTFPs includes the natural, economic, and social conditions of the region. These conditions should be understood in order to completely evaluate and/or recommend changes to NTFP marketing in southwest Virginia or any type of product in any location (Sinclair 1992). Natural, economic, and social conditions describe land and people of southwest Virginia, which are foundations to the NTFP trade. Without land or

people, NTFP markets would not exist. Natural, economic, and social information about the region may provide important insights in solving problems and finding opportunities for NTFP marketing systems.

Information on context is secondary data obtained through a search of literature pertaining to Appalachia and southwest Virginia. Current and historical literature revealed many important natural and social characteristics valuable to an evaluation of NTFP markets. Natural characteristics include geographical features, climate, and forest type. Social characteristics include quality of education and culture. Information about the economy and economic development was collected from the Virginia State Data Center and the Appalachian Regional Commission. Economic data includes data on population, income, and employment.

#### ***4.2 Data Collection***

Objectives two (describe collection and use of selected NTFPs) and three (document NTFP marketing elements of products, pricing, promotion, and distribution) involve two primary data collection methods: literature search and direct interviews. Both methods are designed in this research to provide qualitative data in an exploratory manner. Literature search summarizes results of NTFP market studies elsewhere in the United States (Pacific Northwest, Michigan Upper Peninsula, Minnesota) and in other countries (Nepal and Amazonia). The results of these studies are important to the description of NTFPs in southwest Virginia because they provide a frame of reference. The literature is presented in the preceding chapter 3. Direct in-person interviews of market players were conducted in seven southwest Virginia counties: Buchanan, Dickenson, Lee, Russell, Scott, Washington, and Wise. These counties were selected because they are the major counties of southwest Virginia, and have natural, social, and economic characteristics which indicate relative poverty and high dependence on the forest. Likewise, Emery chose Michigan's Upper Peninsula as her study site because of the region's relative poverty and expected high dependence on the forest (Emery 1996). Figure 4.1 is a map of Virginia

showing the Appalachian region and Figure 4.2 depicts the study site.

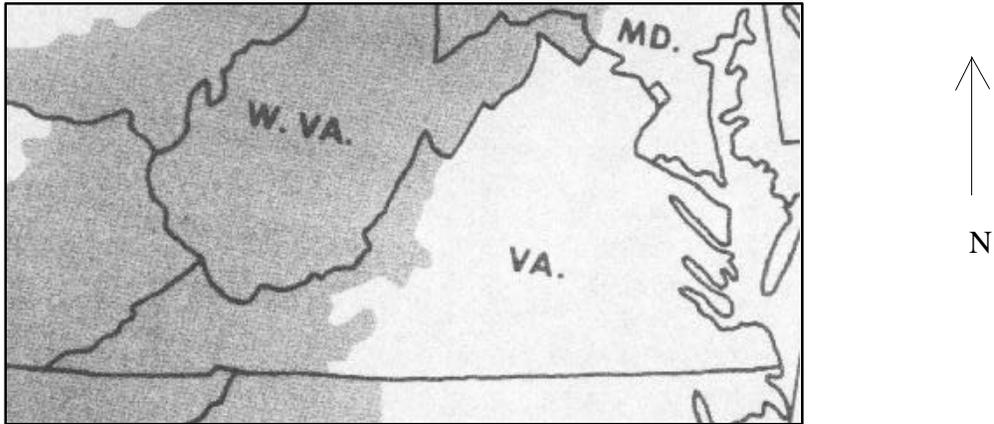


Figure 4.1 Map of Virginia (VA.) (Shaded area is Appalachian region.)

Source: Rothblatt 1971

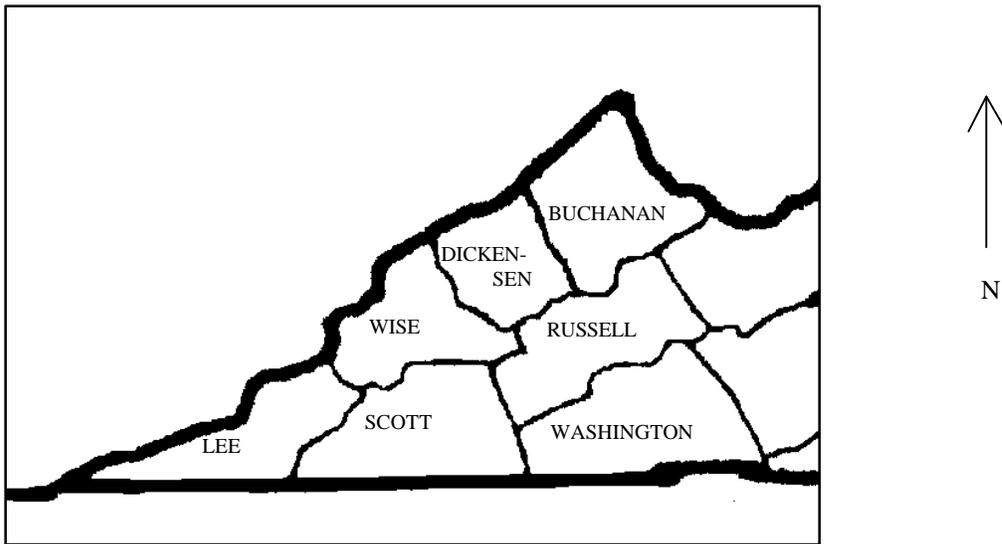


Figure 4.2 Map of southwest Virginia and seven counties in study site

Source: Rothblatt 1971

The strategy for data collection utilized in the southwest Virginia research is the case study. This strategy was chosen because detailed and thorough information regarding specific NTFPs and their market players was sought in the research. Conversely, a survey strategy like that used by Mater (1993) was not appropriate because most market players would not have been culturally receptive to surveys. A high degree of response was needed in a short amount of time. Therefore, case studies allowed information to be immediately collected from market players during direct, in-person interviews. A case is comprised of an individual market player (i.e. collector, processor, dealer) and the details of his or her role in the marketing chain. Cases were identified in each of four categories of NTFPs: craft, medicinal/herbal, specialty wood, and edible forest products. These categories were chosen due to their expected importance in the NTFP trade in southwest Virginia (Hammett and Chamberlain 1997). Numerous collectors, processors, and dealers were interviewed to obtain data for each individual case study. Like Emery's study (1996), market players were chosen as case studies without discrimination based on age, gender, ethnicity, or origin

Field research, involving the identification of market players and direct interviews, was conducted in southwest Virginia between January and December 1997. Three non-probability sampling methods were utilized: snowball, where subjects are found as a reference from other subjects; convenience, where subjects are picked according to what is conveniently available; and purposeful, where samples are selected out of the population for having certain characteristics such as ease of access and representability (Adams and Schvanedeldt 1991, Richards 1997). It is believed that an exhaustively large sample of NTFP collectors, dealers, wholesalers, and processors will be unnecessary due to the cultural uniformity throughout the seven counties. However, this research has aimed to include as many representative cases as possible within its time frame and resources.

Market players were identified during several trips to southwest Virginia to conduct preliminary interviews with conservation organizations and NTFP dealers. Driving through

the region to gain familiarity helped to identify market players or potential informants. Many were found simply by visiting markets and local festivals to talk with people. Also, several marketing and craft association directories were reviewed for names of individuals and organizations involved in marketing NTFPs. Health food stores were visited to obtain names and addresses of market players who process NTFPs at the final level before consumer purchase. Market player identification was continuous throughout the research because one market player would often lead the way to another market player. In this way, snowball sampling was a continuous process throughout the field research. Table 4.3 summarizes the number of market players interviewed in each product category.

*Table 4.3 Number of market players interviewed*

craft products	20 total; 5 collectors, 5 producers, 10 sellers
medicinal/herbal	15 total; 5 collectors, 3 dealers, 5 producers, 5 sellers
specialty wood	15 total; 5 collectors, 5 producers, 5 dealers
edible	0 total*
* <i>edible products were found to be unimportant marketable items in southwest Virginia due to the absence of market players.</i>	

Gaining access to the market players in southwest Virginia is an important and sometimes difficult part of research in studies where the researcher is considered an outsider by the social group of informants. Gaining access is easiest in public settings where there are no secret activities. Sensitive topics and certain behaviors, such as income and competition between NTFP dealers, were specially treated by asking indirect questions regarding the topic. For example, instead of asking the income of a dealer, the volume collected and selling price were asked to infer the approximate income generated from the product. People of southwest Virginia tend to be secretive toward outsiders in regards to their activities in collecting and selling NTFPs, especially if the product is rare or of high economic value, such as ginseng or goldenseal. Access was gained in southwest Virginia

through personal visits with market players in a manner of genuine interest and friendliness. It was important to develop a relationship of trust and friendship with the market player in order to gain access to the site and people.

The role assumed by the researcher in southwest Virginia was highly participative, but not completely since data was gathered through interviews and literature searches and not one hundred percent participation in the daily activities of the people. The participative approach was necessary to develop friendships and trust since the researcher is an outsider (Emery 1996). In addition, being a woman, the researcher was limited in speaking with some collectors and dealers of medicinal plants because of strict gender lines which are culturally present in southwest Virginia. Thus, for certain interviews a male co-researcher accompanied the researcher to increase the likelihood of obtaining reliable data. These interviews were those which involved dealers and collectors in the medicinal/herbal category since these individuals were frequently men. Observation of activities, attitudes, and behavior was also an important role for the researcher and contributed valuable information.

Much of the data collected in southwest Virginia was conducted through the use of semi-structured direct interviews with market players. This method has proven highly successful in previous NTFP studies (Mater 1993 and Richards 1997). Interviews were designed to document and describe important NTFPs, their markets, and critical issues as perceived by NTFP market players (Messerschmidt and Hammett 1997). The market chains for each NTFP category were followed from collector to dealer to final processor and market players interviewed on the topics of products, pricing, promotion, and distribution. Diagrams are drawn of market chains to illustrate the various levels of intermediaries involved in the trade of NTFPs. Points of value addition are described to gain a complete picture of the development of NTFP processing in southwest Virginia. Interviews were semi-structured to allow flexibility consistent with the study's exploratory design. Table 4.4 is a list of questions that guided interviews with all market players.

These questions were not rigid guidelines various topics were pursued according individual interests and expertise of each informant.

*Table 4.4 Direct interview questions*

1. What is the product and what is its use?
2. Which NTFPs are used and how are they collected?
3. Where are materials obtained?
4. What distance must be traveled to collect?
5. How often is the product collected?
6. When are peak collection or selling seasons?
7. How is value added to the product?
8. Who buys the product?
9. What is its price?
10. How is price determined?
11. How much is sold?
12. What proportion of its selling price is the cost of materials?
13. How is the product promoted?
14. What are problems or opportunities encountered in marketing?

### ***4.3 Interpretation of Results***

Objective four (analyze the interrelationships among NTFPs, their market players, and marketing systems) is met during the interpretation phase of the research (Chapter 10). This interpretation is of results of primary and secondary data collection and facilitates the understanding of relationships among NTFPs, their market players, and marketing systems. Four types of qualitative interpretations are performed. First, two important variables, raw material and final product, are summarized for each NTFP category in table format and key linkages discussed. Second, two important variables for NTFP market

players, function (secondary market player category) and motive, are summarized for each NTFP category and key linkages discussed. Third, marketing chains are analyzed by a matrix comparison of market players with elements of NTFP marketing. Elements of marketing included in the analysis are socioeconomic level, location, value addition, product differentiation, pricing, promotion, and distribution. Each element is rated qualitatively for each market player in relation to other market players within the same marketing chain. Each product category entails a separate matrix comparison followed by a discussion of important issues raised in the analysis. Fourth, matrices are cross compared between NTFP categories to learn of important similarities and differences.

Conclusions of the research cover three areas. First, conclusions regarding research objectives are presented and research results related to previous NTFP marketing studies. Second, apparent opportunities for local level NTFP marketing are suggested and third, remaining gaps in the literature are presented with suggestions for future research.