



Guidelines of Developing Sustainable Dryland Products Enterprises Commercial and Development Sector Operators – Version 1

by

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1. Introduction

1.1 What is Dryland Plant-based Product Enterprise in the Development Context?

For the purpose of these Guidelines dryland plant-based product enterprises include plant extracts for medicinal and bodycare products (*Calodendrum capense* seed oil, *Aloe secundiflora/ lateritia*, henna, white or rhassoul clay), exudes such as gums and resins (Acacia Senegal var. *kerensis*, var. Senegal – gum arabic, *Boswellia neglecta* - black frankincense, Commiphora species - myrrh), essential (*Occimum* species, *Lippia* species, *Tarhonanthus camphorates*, *Tagetes minuta*) and fixed oils, insect products such as honey, wax, apitherapy products and indigenous silk for both African and international markets.

As well as the informal use of dryland products there are many commercial plant-based dryland products enterprises already existing in the ASAL that have been set up by development agencies to improving rural and pastoral livelihoods and providing incentives for communities to conserve the natural environment. They are diverse and some are successful others have failed. Most are small scale operations with levels of low investment. These guidelines aim to provide clear advice on how to develop well designed and managed dryland plant-product enterprises, that are sound socially and environmentally supportive commercial enterprises within the Eastern African ASAL.

1.2 Opportunities for Dryland Plant-based Product Enterprise

The link between producers and potential market outlets both in-country and overseas is particularly under developed in the natural products sector. Natural products, that include the dryland products cited, are globally in demand.

Traditionally, herbs used medicinally have been, and still are, largely wild collected. The market for natural products is growing, particularly for plant products and ingredients that are certified as sustainably wild harvested / 'organic' and fair-trade. These markets offer good opportunity for the communities in the ASAL to address food security and income generation. These organic and fair-trade certified systems and markets access brings about mechanisms to drive community lead conservation of this fragile natural environment through trade. The development of community drive dryland products enterprise that have positive social and environmental impact falls directly in line with the police directions and aspirations of all national governments in the ASAL region. They are also directly in line with the global Millennium Goals.

1.3 What are the Main Issues Holding Back Expansion in Dryland Products?

Main factor are often voiced by rural community representatives is that they have; little understanding of the market, no/limited linkages, low level of business ownership, and lack of post-market finance (for purchasing the raw materials, to invest in equipment, infrastructure etc) in the first few years of operation. Thus demonstrates that dryland plant product enterprises must be based on a firm business footing and designed to ensure that their activities have positive impact on livelihoods and the environment.

1.4 What is required to ensure Dryland plant-based Products Enterprise is Successful?

Important aspects to success are the following: ownership, commercial partnerships, on-going training in all technical and business areas, organisational and financial management, strong recording system and financial management systems and controls, good product design, sound market awareness, adaptive value addition technologies, micro- credit and savings systems.

Most effective ways for development agents to support dryland plant product enterprises that are both environmentally and socio-economically supportive and sustainable, includes; (i) introducing & scaling up best practices; (ii) investment in structural & value chain development; (iii) promote private, public partnership; (iv) women empowerment; (v) effective policy influencing; (vi) action research.

1.5 The objective of these guidelines is to assist field managers, trainers and extensionists to guide rural communities in the development of environmentally and economically sustainable community based dryland enterprise. These guidelines relate to plant based enterprises, and does not cover livestock and mineral based products.

2. Summary

One of the most effective ways of bringing out lasting change in socio-economic and environmental conditions in rural regions is through sustainable community driven enterprise and ethical trade. This is an effective method of achieving Global Millennium Goals.

Before starting any support to community based dryland plant products enterprise development a full assessment of the resources and commitment of the core parties should be made during a pilot phase. The implementing partnerships who can aid the successfully adoption of the dryland products enterprise activities sound be sensitized and engaged in the process. These might include landowners, resident Community based organisations (CBOs) and other active Non Government Organisations (NGOs) and institutions operating in the regions.

Success hinges on achieving adequate investment into basic activities (i.e training and extension), early engagement of commercial partnerships that provide strong market linkages and where sustainable and ethical principals are entry requirement, certification and a long term approach to development. Participatory involvement between all stakeholders in the capacity building steps is critical. External financial assistance through development grant and/or by business investors is a realistic need of the majority of community based dryland enterprises due to their lack of capital finance, low risk bearing and business skills capacity.

Stage 1. Identifying the opportunities

1. Initial Scoping Exercise / Feasibility Study

1.1 Screening the potential dryland enterprises option:

To ensure that the plant product selection and recommended value addition processes take full consideration of the objectives, the proposed dryland plant products enterprises for commercial development should be screened against the following central parameters:

- Environmental and ecological sustainability,
- Competitive marketable product can be realistically achieved in commercial setting
- Competitive advantage of the selected product in the commercial setting
- Economies of scale can be achieved
- Business risk is at an appropriate level for all actors involved at each stage in the chain
- Realistic potential for value addition (increase product value)
- Will generate motivating financial and non-financial return to actors involved throughout the supply chain
- Empowering of communities and stakeholders
- Inclusive of and maximising benefits to women at each stage of the value chain.

Economies of scale; sufficient to enter and maintain a rewarding market, and to ensure equipment is efficiently utilised and down time is minimised, and investment cost of this developing business is covered by adequate turnover and profit within an acceptable period. See stage 3 section 4.

1.2 Field visits and potential product mapping exercise. Meet with the relevant stakeholders and conservation specialist in the region to gain a brief overview of the ecosystems and an understanding from experience sharing with the communities, conservationists and development agencies of the requirements for developing sustainable and viable community based enterprises. An assessment of the volumes and ecological health of each identified indigenous plant product and of the environment that they exist within should be made in selected sites across region/s targeted. Potential for the following:

- Sustainable wild harvesting,
- domestication – plantations
- reaching economies of scale commercial partnership and out growers schemes
- reaching and maintaining internationally recognised certification standards (i.e FairWild)

1.3 Identification of the commercial potential of indigenous plant product: The identification of future possibilities and strategies for community based bio-product enterprises will be included all relevant aspects of the production, processing, supply and marketing, commercial sector interventions and cooperation. A comprehensive analysis will include the collection of statistical information on the market opportunities for the potential product. To identify indigenous plants/herbs/trees as to their commercial potential the evaluation and analysis activities a broad market analysis of the selected plant products should include;

- Characteristics and scale of the market at the global, regional, national levels
- Identify market supply and demand trends, with detailed local level analysis
- Main suppliers nationally, regionally, globally
- Supply capacity and structure at the local level
- Capacity and the realistic opportunities for communities to access specific markets.
- Packaging/conditioning, properties of interest
- Demand trends per products
- Demand structure – large scale, small scale, who and where are the main buyers
- Price trends

1.4 Commercial development of the selected products: In the light of the above information the potential for the development of commercial uses of the selected products by rural communities can be assessed using the following criteria:

- Potential supply capacity
- Willingness of the producers/communities to diversify their livelihoods
- Management structure of existing groups
- Potential product value and market access
- Legal framework and potential for certification
- Economic potential for community groups– investment required, and potential returns.
- Eco-certification processes
- Fair Trade potential

Certification systems, which specifically includes the development of the ICS (Internal Control System) required for organic producer group certification, is an excellent supply chain development tool, a central management mechanism as well as an entry requirement for most premium markets. See stage 3 section 3.

Ecological & economic impacts of developing the selected dryland plant product enterprise:

Explore the potential ecological impacts of developing such local businesses and recommend ways to mitigate potential negative impacts. It will be necessary to investigate the following:

- Positive and negative impacts of developing commercial uses of identified plant products from a conservation/ecological point of view
- Recommend ways to mitigate the threats.
- Recommendations will be provided on:
- Which are the indigenous plants/herbs/trees with the most potential to develop bio enterprise, and which are the best enterprise options to supplement significantly and sustainably taking into consideration necessary conservation objectives
- Identify the steps to develop such products (e.g. investment needed, partners).

2. Important Factors Concerning Dryland Plant-Product Enterprise Development

2.1 Sustainable wild harvesting

The development of sustainable wild harvest standards must be used for harvesting of indigenous plant materials. FairWild Foundation (www.fairwild.org) is an official international body responsible for the International Standard for Sustainable Wild Collection (ISSC-MAP) and the FairWild Standard. These standards assure buyers that products are produced in a socially and ecologically sound manner. Annual inspections are carried out by the accredited inspection body, IMO. The Eastern Africa office is located in Nairobi and managed by the Mr Joachim Webber, who is also a registered IMO inspector imo-tanzania@tanzania-organics.com

2.2 Domestication of indigenous species

For scaling up dryland plant products enterprises based on wild harvested plant products, the domestication of these indigenous species should be encouraged where possible. This is particularly important for species that cannot be readily wild harvested at sustainable levels.

2.3 Examples of high potential dryland plant products

From recent studies conducted for a range of development agencies (Oxfam GB, Save the Children US/CARE, African Wildlife foundation, Laikipia Wildlife Forum, Northern rangelands Trust, etc) the major dryland plant-product enterprises assess as having greatest potential for future development intervention include the following;

- Gums and resins (gums arabic, frankincense, myrrh)
- Aloe (indigenous species) domestication for healthcare and bodycare products
- Ethnobotanicals plants for health supplements, remedial human and livestock products
- Bee products – traditional and intermediate hive
- Indigenous materials for body-care products such as cape chestnut seed oil, henna, white or rhassoul clay, ochre for cosmetic dye, aloe extracts, salvadora persica – toothbrush, loofah
- Crafts micro-enterprises, such as paper making, jewellery and
- Indigenous materials for biofuels (initially for use locally i.e the processing centre) such as croton sp, opuntia and other invasive species as high energy charcoal briquettes.
- Useful plant nurseries – rearing and sale of indigenous vegetables and fruit, oil bearing sp, timber and fuel wood, linked to a life skills education programme.

2.4 Value addition

Depot/collection centres and an efficiently operated central processing facility for final processing, packaging and distribution of the bio-products will allow consistent product quality (grading), formulation, design, packaging and presentation to be achieved.

Example of equipment required for primary processing:

- Essential oils: Still and condenser etc for steam distillation and boiler
- Ethnobotanicals: Industrial mill and sieves, modified solar drier/drying barn
- Bee-products: full equipped processing centres (specialised honey, well packaged comb honey, stingless bee, wax, propolis, royal jelly, pollen also require additional equipment)
- Silk: nets and rearing equipment, processing centre with spinning wheels, looms, etc.
- Cold pressed oils: Stainless steel screw press (continuous flow)
- Natural dyes and crafts: adequately equipped workshops

3. Business Assessment for a Dryland Plant Products Enterprise

3.1 What information are you seeking: Following an initial scoping exercise, a detailed assessment (feasibility study) and business plan must then be made of the selected dryland plant products before any action planning, community involvement and investment is made. This should include the expansion potential and investment requirements. The resulting information will inform management decisions on:

- What dryland products can be commercialized successfully in the remote rural context
- Which dryland products will bring about socio-economic and environmental benefits
- What sort of commercial partnerships should be developed,
- Prioritizing and time framing activities
- Types and level of investment required to build physical and non physical assets
- Market direction for the dryland plant products.
- Break-even point and potential expansion plan

Breakeven Point is achieved within the profit margin calculation. It shows the point at which the net return from sales/income matches the total cost of production. The breakeven point allows the relative profitability of the business to be measured, i.e increased sales/income over expenditure is registered as a profit sum and increased expenditure over sales/income is registered as a deficit.

3.2 Parameters for compiling a business plan. These will include:

- Products and enterprise types
- Geographical coverage
- Economies of scale to reach the market and the expected planned expansion stages
- Commercial partnerships, business agreement, financial and management responsibilities and cost sharing aspects.
- Value addition requirements and costs
- Certification and legal standards and methodology of how these should be met
- Semi-processed and fully process produce types and range
- Product and market development
- Cost-benefits and break-even point based on set of known figures
- Gross profit and net profit
- Total investment and cost and source of capital finance
- Payment systems, profit sharing options and micro-banking opportunities.

As a tool to management, business plans will allow for the viability of the operation to be assessed and re-assessed as it moves through its development phases. This should be regularly up-dated, for example; after year one, year three, year 5, etc....

3.3 Marketing plan. Some aspects to consider:

Supply diversification. For the enterprise to expand as the same time as ensuring steady supply to the market it is necessary to devise an expansion plan during the enterprise establishment

phase. This should start with the geographical widening of plant product material sourcing. This will also improve security of supply to the market; for example, if one area becomes badly affected by drought and supply in this location is lost other areas may be less affected.

Product diversification is the next stage in expanding commercial initiatives; for example; beekeeper associations marketing honey and wax could also be training for the production of propolis and pollen, which are high demand nutraceutical food products in the retail market.

Market diversification once supply has been secured in excess of existing market demand then the market spread should be diversified. For example, from small to medium scale retail outlets to a range from supermarkets and delicatessens. Export markets should only be entered if minimum supply levels required by the buyer can realistically be sustained over successive years and quality standards can be consistently maintained. Export markets are not always the best and most lucrative direction for small and medium scale natural product enterprises. It is important to carry out a cost-benefit analysis at each point of expansion. A sound marketing strategy is particularly important; if targeting the international market, should include Good Agricultural Practice¹, organic certification and in line with CITES regs for indigenous materials

Marketing strategies of course must be adapted to the national regulations as well as those for the importing country/state, such as the EU regulations COM 2002/1 for herbal medicinal products. Regulatory frameworks set standards for proof of safety, efficacy and quality; determine the scope of claims made by the trade about products. This is the information included on retail product labels. It is necessary that research and testing is carried out to support any product claims made on the promotional materials and product label.

3.4 Areas to be included in a basic budget: Example using of a cultivated product:

(i) Gross Profit per land area: sale value of the raw product minus cost below.

Income – Example. Yield per/hectare. Or yield per harvesting location. Price per kg or tonne.
Costs (per ha) – Example: Transport to market, seed, labour and variable costs of land preparation, composting, planting, harvesting, weeding, pest control, water/irrigation, etc.
Gross Margin/ha; Income minus costs

(ii) Profit on processed product: sale value of the processed product minus cost below.

Includes cost of drying facilities and other infrastructure, management, freight...

Raw materials: Where to obtain the correct vegetative material or seed?

Production unit: What is needed? Equipment and infrastructure, vehicles, stores...

Staff requirements: Management, extension services, skilled, unskilled.

Processing: What is needed? Fix costs: Equipment and infrastructure, vehicles, storage, etc...

Product analysis – access to accredited laboratory/sample sent to buyer. Packing – what does the buyer require, where to obtain the correct materials, cost.

(iii) Net profit: sale value of the final product minus cost below

Management Costs: Seasonal and full time cost of staff, ongoing cost of management.

¹ Good Agricultural Practice (GAP) provides guidelines for cultivation, harvest, processing, packaging, storage.

Marketing: Branding promotion and market compliance, freight costs etc...
Cost of investment (loans and trade finance etc). Other overheads.

3.5 Commercial pilots : Commercial pilots should be established before full business investment is made, in order to understand the commercial viability of the selected plant products. Business plan information can then be up-dated for the communities and investors to assess the exact scaling up needs for the enterprise.

4. Impact Assessment

4.1 Economic impact: The non-cash returns from better management of the subsistence resources of rural communities, although difficult to quantify, is likely to be substantial, i.e food security and improved quality of life. The cultivation of high value crops can provide good returns from small land sizes and domestication of indigenous useful plants can withstand the harsher conditions of the drylands. Incomes can be derived from natural resources, both as sustainably wild harvested materials and as small commercial nurseries. All of the proposed enterprises can be participated in by women and men, the disadvantaged and the youth, and create tangible employment in the ASAL regions

4.2 Social impact: As land pressure increases rural communities are forced to abandon their traditional ways of managing these resources, and many of their cultural attachments to the living environment also dwindles. Dryland plant based enterprise can stimulate communities to re-define the value of their cultural knowledge as well as their natural resources.

4.3 Ecological impact: The alternative for communities to improve their incomes from sustainable utilisation of remaining natural resources (instead of the common and largely unsustainable methods of production and over grazing) provides attractive incentive to maintain and manage the natural environment for the future benefit of all.

Box 2. Benefits of dryland plant-product enterprises - examples

- Means of additional income from using indigenous knowledge and resources
- Means of livelihood diversification
- Additional coping strategy during the drought and buffering from the increasing affects of climate irregularities
- Existence/abundance of natural resources that can be sustainably & profitably used
- Sustainable, regulated utilisation will have positive environmental impact
- Unmet demand locally /nationally and internationally
- Potential to expand to higher numbers of vulnerable pastoralist populations and can involve the poorest members, including women and marginalized groups

Monitoring and evaluation of the activities and their outputs is an important component in further informing the management decisions on the development of the successive phases of the business. Expert advisors may be necessary for providing information on specific technical and business development areas

5. Rational for Selection of the Dryland Plant-Product Enterprises

5.1 Sustainable wild harvest plant products provides a tangible incentive for communities to value standing forests and take a real interest in the welfare and management of their natural resource. Sustainable wild harvesting and value addition of plant products also provide opportunities for direct participation of women and landless families/communities. Developing sustainable supply will mean the establishment and promotion of sustainable harvesting levels and protocols, and the enforcement through externally (FairWild, Organic and FSC) and internally driven (ICS) certification and as part of the purchase criteria of the buyer/s.

Bee-products: Traditional (log) hive production exists right across the ASAL, particularly in areas where traditional bee keepers have maintained their activities. Well structured supply chains, and the construction of facilities are important in ensuring consistent supply. The uptake by all actors in the chain of specific protocols for handling, processing and storage are fundamental steps for gaining marketable honey. Well packaged and presented with storyline, as a branded product to the national market would be a possible first rung in the commercial development of bee product. The diversification to apitherapy products (pollen, propolis, royal jelly) will maximise returns as the skills and business capacity of the enterprises develop. This should require a piloting phase to include trial equipment and professional training.

Medicinal/nutraceuticals: There are many indigenous plant species with commercialisation potential for the international and national markets. However, for species where survival is threatened where it is difficult to assure sustainable harvesting levels, and where root and bark is the part required for commercialisation domesticated should be the only source of supply. For the local and national market, the development of a range of herbal remedies and supplements could be developed to retail level and marketed through community based pharmacies. Many can be effectively used to target HIV-AIDS and associated disorders, and common ailments. Processing of herbal supplements for the African market is not capitally intensive, and effective equipment can be inexpensive to purchase and use.

Essential oil: There are a range of indigenous plant oils that are already recognised in the European fragrance markets such as wild ocimums (*o.americanum/gratissimum/kilimanjaracom*), gums and resins (*frankinsense, acacia kirkii, qasil - Zizphus mauritiana*), tagette minutes, lantana camera, lelechwa, lippia kituiensis, lemuria root and flower, red pepper tree. Essential oils enterprise is relatively low risk as there are no hygiene criteria and quality parameters are easily met if the correct genotype is distilled, the equipment is well calibrated and basic distillation techniques are followed. Processing equipment is simple and not expensive to purchase or have built. The open indirect steam stainless steel distillation equipment can be used for multiple herbaceous essential oil types. Others, such as gums and resins, are better distilled in a vacuum stir still.

Cold pressed oils: There are several viable indigenous tree seed oils that are found abundantly within the ASAL that are in demand in the international market. Some of these oils (classed as fixed oils or carrier oils) have excellent chemical properties and suitable for developing a range of bodycare products for national, regional and eventually export markets. Such equatorial tree

seed oils may be sources from: cape chestnut, moringa, mango and pawpaw seed. Processing is simple and inexpensive and this dryland enterprise type can provide lowest risk and highest return for the participating communities in the short to medium term.

Bodycare products: The African market for bodycare products is immense, being a traditional part of cultural practices. The national and regional demand for high quality natural ingredients based, well formulated bodycare products is increasing. The majority of ingredients for a range of bodycare products can be sources and processed in the dryland regions, the processing equipment is relatively inexpensive, and other dryland plant-products enterprise types can operate in synergy (such as essential and tree seed oils).

Crafts: Most of community based craft enterprises remain small and often not able to consistently meet national level demand. Quality and design is mostly a long way from export standards. Provision of craft workshops / incubation facilities, sufficient training for artisans and product design assistance will enable the development of viable dryland plant based craft product enterprises for domestic and small tourist based niche markets. Export markets can also me realistically serve is the quality and pricing is competitive with crafts from other parts of the world. This has so far proven to be a major hurdle for Africa craft products and has been crossed by only a few craft enterprises across Eastern Africa.

5.2 High value, cultivated natural products are considered where the production risk is low, the environment is favourable and there is sufficient competitive advantage.

Herbs and Spices: The climate and growing conditions parts of the ASAL are ideal for the production of a wide range of culinary/beverage/medicinal herbs and spices. Demand for organic spices and herbs are increasing internationally, both in terms of value and volume. Local market is strong in the ASAL and many species grow well in the drylands include fennel, coriander, anise, poppy, fenugreek, birdseye chillies, cayenne, paprika, ginger, mustard. Production may be viable in areas of land close to water ways or with access to shallows wells. It is particularly important that a cost benefit analysis between non-food and food crop production is carried out before committing water, land and labour resources to such ventures.

Cold pressed oils: The same equipment for the bodycare product oils can be used for the extraction of cold pressed oils from cultivated production of high value oilseed crops such as, evening primrose and golden linseed for the nutraceuticals industry. There is large and growing international market demand for organic certified supply of these oils. These crops are suitable for production by small scale farmers where economies of scale can be meet and such enterprises are more rewarding than traditional practices. See cost benefit analysis above. Safflower and sesame is produced commercially in the ASAL.

Medicinal/nutraceuticals: Domestication of indigenous African medicinal plants provides a controlled method of supplying national, regional and export markets with dried products or extracts in terms of ecological sustainability and product supply. There are several medicinal herbs that are not indigenous but adaptable to the dryland conditions in Eastern Africa, and are simple to grow and process, such as echinacea purpurea.

Stage 2. Designing Development Support and Partnerships

1. Designing Development Sector Support to Increase Positive Impact of the Business to the Producers

1.1 Justification for Development Support to Commercial Dryland Plant-Products Enterprises

As the viability of investing into commercial operations in the ASAL is low and the risk, development and government driven assistance is necessary to raising the business potential of these areas and attract private sector partnerships. Support to the initial opportunity cost areas, below, is likely to make the difference between success and failure of new enterprises:

1.2 Development Support within the Commercial Arena

Drylands income diversification strategies and activities must be based firmly on commercial grounds and provide exact and reliable information and exposure to enable communities to understand, evaluate the cost-benefits of the alternative/ additional/ complimentary enterprise for plant products business options. It is important that correct and appropriate facilities and equipment are sourced and constructed, planting materials of correct genotype are used, producer groups, extension staff and operators are sufficiently training and assisted with technical and management advice.

1.3 Producer group structures and business operating capacity

There are basic realities that need to be recognized and addressed to successfully develop enterprises that can lead to economic improvements in the livelihoods of rural communities, at the same time as conserving the environment of the ASAL where impact is long-term and the effort is replicable. These include the following:

The need for well organised and managed producer groups: To enable the community owned business operation to develop and to meet certified requirements for group certification, the small scale producers and wild harvesters need to operate within a strong organisation structure, with transparent financial handling systems, sound and sufficiently skilled management, and with effective recording systems in place.

The need for careful group selection: In order to focus the activities where measurable results can be achieved products and producer groups and co-operatives/associations must be carefully selected. Selection criteria could include:

- The track record, good governance etc...
- Potential for production, processing and marketing
- Level of capital investment existing and required
- Economies of scale can be achieved in a viable time-span
- Organisational ability to develop and manage a supply chain to reliably serve markets
- Experience in value addition and product quality management.
- Capacity to develop adequate value addition skills to meet buyer specifications

The need for training and advice: It is clear that most producers and operators in rural community have limited experience of business, enterprises and market development and have not operated supply chain orientated recordings systems and no knowledge of certification compliance protocols. Assistance and training is needed in these areas to enable the producers to operate efficiently, sustainably and viably to achieve market entry and sustain the business.

The need for appropriate management structure: To fulfil the commercial requirements of private sector industry and to meet traceability and transparency requirements of the market and certification standards.

The need for capital assistance: Economic huddles must be crossed in a manner that does not distort or greatly compromise the future independence of the enterprise. This is one of the most difficult balances in development sectors to understand and to achieve.

Rural communities rarely have capacity to raise the necessary finance to establish new businesses, and expand to the level that can meet basic market requirements and become competitive. If business planning is undertaken from the onset there is more possibility for producers and groups to apply for low interest loan. If participatory business planning is carried out with producer groups at an early point where level of capital and risk involved, investment levels and breakeven points are clearly understood there is a strong chance that they will fully own and drive the enterprise, accept responsibility of grants, investments and loans.

The need for commercial partners: The strongest starting position for a dryland plant-products enterprise support initiative is to develop partnerships with commercial operators at an early stage in the development. Commercial partners can help to fine tune the operations and to focus activities correctly towards reaching marketable quality and quantities. Such aspects include: achieving sustainability of wild harvesting (i.e through setting sustainability parameters and organic certification), developing/strengthen the supply chains through organisational support, training and extension, increase the returns to the participating communities through improving techniques of production, developing handling and processing facilities, and expanding the enterprises to include large numbers of the resident communities.

2. Partnerships

2.1 Commercial partners

Once the conditions are achieved to attract commercial partnerships, care should be taken to ensure that partnership are based on transparent and equitable agreements. MOU/MOAs (Memorandum of Understanding / Agreement) are important is clarifying and agreeing roles and responsibilities between the commercial partners, the producer groups and the development partner. Commercial partners should fulfil the following:

- Wish to develop or currently developing organic markets (international, regional, national)
- Willing to follow fair-trade principals
- Willing to abide by the terms of the Memorandum of Agreement (MOA)
- Interested in maintaining a long term trading relationship with the producers/harvesters
- Take full responsibility of the financing of the operation

- Take full responsibility for certification compliance (organic/fair-trade/product quality)
- Provides adequate and appropriate management capacity to the project.

In developing the commercial operations, the producer groups need to be capable of:

- Developing exportable quality and quantity of product in demand in the export market
- Reaching and maintaining the required quality and hygiene standards
- Developing and managing an Internal Control Systems for organic certification
- Obtaining the grading, processing equipment to meet the market requirement, or developing a working relationship with an entrepreneur with the appropriate equipment.

Commercial partners can be engaged purely as service providers if the producer-owned enterprise has raised sufficient funds/profits to pay for these services, and also if the communities have the knowledge, skills and vision to drive their enterprise independently. Alternatively, commercial partners can take part as shareholders, bringing in share capital from which to operate the enterprise and also provide the drive to enable the future success of the enterprise. The third option is for the commercial partner to interact with the producer-owned enterprise as a buyer of the semi-processed/processed material, under an official (e.g. implemented under MOA) or unofficial equitable long term trading relationship.

The opportunity for gaining corporate involvement in the development of the community based dryland enterprises should not be overlooked if these initiatives provide sufficient publicity for the corporates (to provide ethical and conservation 'goods' to their company portfolios) and/or financial reward in terms of advertising their products and services.

2.2 Development partners

NGOs operating in the target area: The extension, training and some of the advisory input could be developed through working partnerships with specific identified national intermediary organisations (IOs) and the relevant government offices.

European Union trade support schemes, such as the GTZ managed PPP scheme and the Dutch PSI scheme, operate through the national governments of the EU countries, facilitates and strengthens new partnerships between purchasers in the West with commercial producer operation and companies in the two-thirds world. They provide advice, trade missions, etc... ACP countries are entitled to some import tariff relief under the Lomé Convention. National market import and trade support organizations, such as SIPPO in Switzerland, CBI in the Netherlands. The International Trade Centre, ITC-Geneva, provides a comprehensive range of market information and market research. The Market News Service is published via the ITC website, on a regular basis www.intracen.org/mns

2.3 Research partners

Developing research partnerships with nationally located institutes not only provide a wealth of information, laboratory facility for testing and analysis, but also the opportunity to gain accredited research input to the pilot phase. The provision of services such as regular efficacy testing of the herbal supplements is a key area for collaboration. It also may be possible to negotiate a low fee for these services based on shared findings and research information.

Stage 3. Business Implementation

1. Steps Required to Set-up Community Based Dryland Enterprises

Activities to support the development of dryland plant-products enterprises in the ASAL should follow similar steps as indicated below:

1. Raising awareness on benefits of creating commercial entities,
2. Producer groups selection, based on history, commitment, interest, track record of groups.
3. Training, specialist assistance and extension support, this will include:
 - technical production of domesticated and high value introduced plant products,
 - developing and managing sustainable wild harvest protocols and modalities,
 - certification
 - handling and storage,
 - business & organisation management,
 - retail product development,
 - branding and marketing
 - business and supply chain development.
4. Facilitate the development of transparent record keeping and financial handling with sufficient traceability to meet the certification (organic and fairtrade) and market requirements.
5. Information provision and facilitate experience sharing among producer groups and traders (e.g. through exchange visits, interactive workshops and field visits).
6. Guiding the setting up and management of the ICS (Internal Control System) required for organic and fairtrade certification, and facilitating the inspection costs
7. Building operational depot centres which serve the participating producer groups
8. Developing the commercial partnership
9. Developing the markets, branding and promotion
10. Establishing and testing the models.

2. Physical Structure. Examples

2.1 Depots - Primary Processing and Collection Centres: Building strategically positioned depots to serve the participating producer groups will be a priority requirement for the development of most dryland enterprises. These can be shared facilities between dryland enterprises; overheads and running costs can thus be decreased significantly against income returns from the activities. The depots should comprise a receiving room, semi-processing room, handling and storage facility. For raw material such as the comb honey, tree seeds, essential oil and medicinal plant materials, the depots can be used for collection, grading, payment and primary processing and bulking. The materials can then be transported to the central processing centre.

2.2 Central Processing Center: The development of a central processing facility will be the key to providing the markets with a consistent quality product. It will ensure economies of scale

and enable the bio enterprises to share overheads. Central processing facility will also enable consistent final grading, high level maintenance of quality and hygiene standards, appropriate packaging and storage conditions. It will provide the producers with the opportunity to consolidate consignments.

2.3 Commercial trials: Commercial trials will be required to assess the commercial viability (including levels of active ingredients) and feasibility for commercial production by producer groups. The trials will also act as demonstration sites and to host the initial stock of mother plants of the correct acquired and tested genotypes.

3. Non-Physical Structure. Examples

3.1 Operations

The design of the dryland plant-products enterprises should be based on transparency and accountability if the enterprises are to succeed as viable business with expanding markets. The design should include; commercial partnership with business operators with a sound track record of ethical business and trade; accurate recording system that will be put in place to comply with organic and fairtrade certification, certification protocols and annual inspections, regular auditing of project expenditure.

3.2 Value chain development and the ICS

All too often, rural enterprise development opportunities are not realised because of weak links in the supply chain from market to producer and back. Development of the ICS (Internal Control System), a statutory EU requirement for organic certification of producer groups, establishes an externally verified system that is audited annually and operates on the basis of an internal management structure and recording system that ensures traceability and transparency of all actions concerning the handling and marketing of the certified organic product/s. The ICS ensures compliance of individual harvester/ producer up through the supply chain to the point of sale to the buyer. Producer groups need to record the time, location, qualities and methods of harvesting, the transportation and storage, the processing methodology, plant and equipment, time, location and volumes, storage and further transportation to the point of sale, the handling of finance, payment procedures, etc.. for each product.

The ICS uses members of the community, specifically trained field officers, recording clerks and managers to ensure the system is operated efficiently. Risk assessment and the counter measures, as operating protocols, are initially carried out using a participatory process with the communities involved. Non compliance of any of the members activities is first handled at the producer group level and then by action of the Co-operative's/Association's management. Compliance is therefore governed internally and assessed externally by an accredited inspector. As non compliance will directly lead to loss of an attractive market the system is successfully self-policed in the vast majority of cases across the globe. As a result, the ICS represents a strong supply chain mechanism, enabling greater consistency of supply and quality of product (engaging product handling and processing criteria). It also ensures a safer food product in

terms of health as a result of the certified system based on traceability and transparency, and a greatly reduced risk of contamination by agro-chemicals and other pollutants.

3.3 Practical steps for establishing the ICS

At the product group level, the activities to develop the practical management and necessary recording system to achieve trace-ability and transparency for certification included:

- Identifying and concluding names of the producers and amounts per season supplied to the organic certified processor, and of which bee product supplied.
- Identifying name of the group and the gross amount of products supplied to processor
- Identifying and concluding name and responsibility of the field officers and extension team engaged in the ICS management.
- Training of extension staff, producer group co-ordinator and lead farmers (group managers) in the set up and management of internal control systems.
- Intensive training of extensionists / field officers as support agents.
- Extension staff and lead farmers (group managers) competent in all techniques of production, processing to certification criteria.
- Periodic assessment (prior to first inspection) of field staff progress and in-situ trainings
- Ensure reporting structure are fully in place, and the group manager are operating to collect information for each farmer/wild harvester member at village level working with an extensionists (know as the 'supervisor') collects information and checks each farmer. Also that information is collated in a recommended recording system by the groups co-ordinator.

The depot manager has a recording system for the products (name of producers and the name of the group he is a member of) and the quantity of the product purchased. (Record price paid to the producer if fair-trade certification is also involved). The recording system used by the field officers in the data collection must include the producer records and the record of the production co-ordinator. The collective records are held by the production co-ordinator which are then inspected by the external inspector once per year (or by spot checks within this time).

Record handling: Development of the following files under the IS system will be required to fulfil producer group/associations administration, accounts management and for certification / market compliance:

- Overview map showing all harvesting areas.
- Copies of depot delivery form
- Harvester's list
- Copy of Harvester's contracts
- Internal Inspection Reports
- Store Registration Forms
- Store Declaration forms
- Buying records
- Sales records
- Staff contracts
- Organisations operational manual

Apart from these, the bookkeeping of the enterprise operating costs must be kept, as well as a file with the minutes of management committee meetings and a file of correspondence with certification body.

Files kept with the ICS extensionists (field officers)

- Copies of the maps of their villages
- Copies of the Farmers' List.
- Buying records (during buying season)

Correlation with product trace-ability as it moves up the chain (using the warehouse receipting system) ensures that the monitoring system is in place and working properly.

4. Core Activities to Address Basic Business Principals

In order to assist the development of sound and sustainable livelihoods all actors need to take full regard of the business basics, which are the following:

- *Competitive advantage*
- *Economies of Scale*
- *Ability to meet market forces*
- *Opportunity cost*

These areas are brief explained below, with bullet points on the suggested support activities

4.1 Competitive Advantage

The main factors of competing in the market are the price and the quality. There is competitive advantage of exporting organic and fairtrade certified products, due to the market demand and under supply of these products. This has particularly relevance to gums and resins, bee products, essential oils and the dried fruit, where the market impact of organic certification is significant. Price premiums range from 40-50% for whole grade gums and resins, 80-300% for organic essential oils and 30-50% for honey. Fairtrade certification (FLO) does provide a minimum process for the products types that FLO covers (such as honey) but not necessarily a price premium; it does increase market demand and competitive advantage in export markets.

For retail finished products for the national and regional markets, well presented and processed /formulated products will compete well even when prices are 20-30% high than other brands of the same product type that are inferior in these specific areas. This applies more to the medium and upper end of the market. In the low market bracket price sensitivity is particularly high and well-formulated attractively packaged products will not move if over the price taking threshold². Market research and trialling need to be conducted carefully before price setting.

² The mainstream African market is far more price sensitive compared to quality sensitive (to a lesser degree at the apex), as is the reverse in the mainstream EU and US markets, and most accentuated in the Japanese market.

Capitalising on the intrinsic condition, such as people and environment story, authenticity etc, should be included in marketing the story line. This also provides competitive advantage, i.e natural products from clean un-polluted conditions, harvested and processed by rural communities now able to increase their living standards and food security as a result of ethical trade and improved livelihoods / business returns.

4.2 Economies of Scale

In order to enter the marketplace producers need to first identify the initial minimum supply levels. It is then necessary to achieve the economies of scale that maintain the market position and/or open up greater markets, to ensure equipment is efficiently utilised and down time is minimised, and the overhead, loan servicing and investment requirements of operating a developing business are covered by adequate turnover. This points leads to the need for consolidating the pastoral/rural enterprises under one or several but collective companies that has the capacity to service the overheads and running costs of operate and manage the business, and provide consistent and high level of quality control, product supply, market interaction etc...

4.3 Ability to Meet Market Forces

To access the viability of exporting products in this sector, and for selection of the most appropriate crop to grow for export, it is necessary to clearly define the following:

- a) The market advantage of exporting from the ASAL - such as high labour, high land requirement or difficult to mechanize, suited to the growing conditions.
- b) The opportunity cost - is the product well established in the marketplace, what investment in equipment is required to prepare the product to the market standards. Wild harvest, can the raw materials be feasibly sourced in the quantity required by the buyer
- c) Risk factor over financial return - usually High Risk-High Return. How tolerant is the crop to the growing condition, quality and statutory and buyer demanded, quality standards.
- d) Gross margin per hectare for cultivated crops, or financial return to the wild harvesters

A development programme should initially focus at the local to national market, growing to the regional market once economies of scale are achieved, and only moving to export markets if the price return is sufficiently higher, the national and regional markets are saturates, or there are other tangible economic and environmental spin-offs.

Partnerships: Any pastoral/rural enterprise development initiative requires both a developmental approach and a business approach. The combined requirement for capacity, in terms of skills, professional guidance, extension and training, financial assistance, access to micro-credit etc, as well as strong linkages with commercial partners and the marketplace, signals the need to develop strong partnerships. These partnerships can be formed on several levels: (i) Implementation, (ii) Financial service/micro-credit, (iii) Commercial partnerships

The fostering of long term trading relationships is all important, from the large scale to the small scale, to ensure the viability of the enterprise (i.e investment into a crop and the costs recovery over successive seasons; and annual profit made over the variable costs incurred in the season). To succeed as producer groups must be in a position to make at least a basic

business plan. Commercial partners provide the most appropriate and effective tools in creating long-term sustainability of these operations.

Producer / Operator Capacity: A careful assessment must be made of the organizational and management ability of the producer groups and commercial operator. The majority of the develop agents' effort will be placed in developing well organised, structured and technically competent groups and then in the relevant technical skills development.

Gender Mainstreaming:

- Should be proactively promoted and encouraged at the community level as well as being endorsed as part of the commercial business approach.
- Developing the constitution and bylaws of the producer groups working with the dryland enterprises to stipulate the involvement of women in income generating activities.
- Training in improved techniques that are appropriate for women participation and adequate to achieve the quality expected in target markets.
- Women retain their incomes for their efforts through small bank accounts where sale returns can be directly placed.

Financial accounting and reporting: should include; commercial partnership with business operators with a sound track record of ethical business and trade; accurate recording system that will be put in place – preferably to comply with organic, sustainable wild harvest and fairtrade certification, regular auditing of project expenditure and monitoring at the point of procurement (i.e payment to the producers at the depots). In addition, monitoring and evaluation expert should be established to provide internal as well as external assessment and reporting. Audit the accounts on an annual basis must be conducted.

4.4 Opportunity cost examples for generating production and supply

The opportunity cost for developing commercial operations is mostly not technically demanding but required significant man-power and time.

For attracting and managing high community participation the following examples are areas need to be addressed:

- Trade finance and capital to develop the business and sustaining product supply.
- Training of producer groups in technical, management and financial aspects
- On-going management and organisational capacity building
- sustainable wild harvest protocols and regulation through agreement based on compliance to these protocols (using the Internal Control System used for organic certification)
- Construction of the depot and processing centres
- Commercial partnerships (with good interaction between parties and MOU/MOA to bind the agreed mode of operation and responsibilities) and linkage to the market.
- Developing demonstration sites that can combine with the trial and plant multiplication sites, which would continue as a source of mother-plants for new operations. Modelling the new enterprises for small scale producers and as a facility for training at the various levels;

i.e, production and handling of the materials and grading, for the producers and for the co-operative depot centre/central processing centre staff.

A piloting phase will provide the opportunity for grant assistance for capital items, a programme of training and to develop the basic extension requirements; also to set up a micro-finance facility for providing the producers/groups with affordable loans for the expansion of these pilots into fully commercial enterprises.

Commercial Pilot Projects: In order to instigate the commercial operations a pilot projects will be instigated for the selected producer groups and products to gain a realistic picture of the full opportunities and comparative advantage (against traditional / existing land use) of the selected products. The pilot projects also providing demonstration sites for other producer groups and, importantly, seed multiplication centres. The pilots can be monitored and evaluated during a first phase to achieve reasonable information for developing the feasibility studies for dryland plant product enterprises to basic business plans, and then continued as a second phase (whilst full commercial operations are being developed, based on the data from the first phase) to provide firm date for full business plans for expansion investments etc.

Selecting the pilot areas: The aspects which formed the basis of the criteria for the selection are as follows;

- 1). Ecology (status)
- 2). Livelihoods (status)
- 3). Social (i.e human-wildlife conflict area)
- 4). Building on previous work – collaboration opportunities, avoidance of duplication.
- 5). Accessibility (ease of access to an area)
- 6). Highland – lowland interaction
- 7) Existence of community management systems

Example categories of indigenous plants trials according to their agronomic requirements:

Group A: Roots: Hypoxis rooperii (African potato), Withania somnifera (Ashwaganda), Plectranthus barbadensus,

Group B: Leaves - bush: Lippia kituiensis, Lippia javanica (like lemon verbena), Ocimum americanum, Ocimum gratissimum (wild sage), Saturea abyssinica (wild mint), Acmella calirhiza,

Group C: Leaves - fast growing plant, leaves: Tagetes minuta , Urtica massaica, Hypericum perforatum/ oligandrum

Group D: leaves, all parts - Warburgia unguandensis, Prunus africanus, Ximenia Americana, olea europa/elgon

Group E: Flower: Carissa edulis and ossiris lanceolatus (sandlewood)

Group F: Seed - Calodendrum capense (cape chestnut), Croton megalogarpus

Group G: Leave - Aloe secundiflora, aloe lateritia

Table 3. Example of agronomic requirements of the species types in establishment period

Crop Type	Irrigation Mm/week	Nutrition (compost kg/m ²)	Growth type	Drainage needs
Group A	20 - 40	5 – 7	Perennial	Fairly Good
Group B	30 - 50	3 - 4	Perennial	Good
Group C	20 - 30	4 - 5	Annual	Fairly Good
Group D	25 - 50	3 - 4	Perennial	Good
Group E	15-20	Zero - 2	Perennial	Good

Commercial trials & product analysis: The development of a representative range of commercial trials will provide a solid starting position and reliable entry point for the selected natural products enterprises. Commercial trials are necessary for the full range of proposed natural products. Sampling and chemical analysis will be required for each of the trialed products.

4.5 Product and Market Development

Once the value-added product quality has been achieved to standards of the target market product branding is the non-physical method of value addition that should be undertaken. This must be professional and innovative designed and implemented in order for the product to gain a competitive position in the market. Product branding includes the 'story line', the image that you are selling with the products. Packaging is a major factor in product competition and must be designed to maximise customer appeal. For example; the level of competition presented by imported natural bodycare and health products, attractively presented and pleasant and effective to use, means that value addition must be to the standard that achieves a competitive product for the middle and upper income bracket in these markets. Therefore good branding, packaging, promotional and marketing strategies are basic requirements.

Promotional tools: Website, media, product promotion within retail outlets. Also self promotion as a well formulated attractively packaged and presented product.

Market research: Major brokers and traders publish regular market reports to advise their customers about market trends (supply, demand and price developments) on websites. International trade fairs provide excellent opportunity to gain an in depth understanding of market trends, meet potential buyers, evaluate new product designs, pricing development etc

Market sampling: As soon as viable quantities of semi-processed and retailed packed (value added) natural products are produced from the pilot projects, the market should be tested both the national and international, through market sampling methods

Assessing export viability: To access the viability of exporting products in this sector, and for selection of the most appropriate crop to grow for export, it is necessary to clearly define:

- a) Market advantage of the product i.e cost and availability of labour, land, and other inputs suitability to the growing conditions, etc...
- b) Opportunity cost; is the product well established in the market, investment levels required for equipment to prepare the product to market standards. Can the raw materials be feasibly sourced sustainably in the quantity required by the buyer?
- c) Risk factor over financial return; tolerance of species to the growing condition, quality level, statutory requirements, hygiene and quality standards.
- d) Gross margin per hectare for cultivated crops, or financial return to the producers.

Relevant international trade fairs. Some websites for suitable congresses and fairs:
 BIOFACH Germany www.biofach.de ; BIOFACH US www.nuernbergglobalfairs.com ;
 BIOFACH Japan www.nuernbergglobalfairs.com ; Natural products Expo (for US, Asia and European countries) www.naturalproducts.com

4.6 Summary of Business Development Steps: These are as follows:

- Conduct business plans for the indigenous species that have national market demand and sufficient availability in the ASAL region.
- Pilot phase (1-2 years) to measure output and costs on basic business terms

During which time;

- Conduct business plans of the introduced species for the national and the international markets, once the basic information has been gained from a pilot phase
- Identify and set up commercial partnerships.

And then;

- Develop the management and trading entity, secure investment capital and trade finance.
- Develop infrastructure and systems
- Develop a marketing and promotion website facility, and product branding.
- Develop commercial partnerships further
- Applications can be made to trade support schemes during this first operational year for the existing commercial enterprise.

5. Structure of the business and financial management entities for pastoral enterprise. Examples

Three examples of feasible options for developing a successful working structure for developing pastoral enterprises:

5.1 Commercial pastoral trade association

- Could comprise representatives of all the existing pastoral enterprises across the ASAL
- provide a representative and co-ordinating functions
- Operates promotion and marketing roles for the member enterprises.
- Inexpensive to operate and would need only one full time co-ordinator to carry out the basic functions. In Ethiopia positive synergies with Ethiopia Pastoral Forum could develop

- Services could include marketing and promotion (website, trade fairs, buyer missions etc), facilitating training, certification and business development support to the members.
- Could also develop important lobby and advocacy roles to address the existing voice poverty amongst the pastoral communities of the ASAL.
- Need funding to support these activities and expand its service provision to members

5.2 Stakeholder owned pastoral enterprise trading and service providing entity

- Can be a company or co-operative union
- Can comprise a wide range of shareholders from pastoral communities and associations, existing enterprises, and relevant commercial ranchers and ecotourism enterprises
- Can provide a stakeholder owned trading facility for dryland products.
- From profits and with the help of trade-support grants, it can operate a service providing facility covering such as; product promotion, marketing, pre-market finance for seasonal purchases of its shareholders, training and expert advisory input to product design and development etc, trade fair exhibitions/representation, arrange micro-finance facilities for its small scale members,
- Create economies of scale by consolidating consignments of member dryland enterprises
- It can act as an intermediate buyer for its members, conduct sales and distribute dividends to the stake holding members from premium returns.
- It would need to create sufficient funding to employ an accountant, and core staff (i.e executive manager, operations manager, secretary), and for its service activities.
- A Trust structure can also attract investment from 'Green Banks' / ethical investment companies such as Triodos, Rabobank and shared interest.

5.3 Trust with separate commercial trading and charitable status

- Can comprise two independent operating components; a separate commercial trading arm and a charitable status under which a service providing facility can be supported.
- Has opportunity to attract grant supported to facilitate its services provision to its stakeholders due to its NGO charitable status
- Through ownership of a full commercial 'for profit' company it has direct access to business and ethical trade
- The commercial company arm has also invested some of its profits (this reducing tax burdens) into the NGO arm on the Trust to support the service provision activities to develop the pastoral enterprises it engages with.
- A Trust structure can also attract investment from 'Green Banks' / ethical investment companies such as Triodos, Rabobank and shared interest.