

Proceedings of the  
**Namibian Devil's Claw Workshop**

(5 – 7 February 2013, Arebbusch Lodge, Windhoek)



## **Workshop highlights and resolutions**

- The aims of the workshop were: 1) refresher training on the 2010 National Policy on the Utilization of Devil's Claw (NPUDC); 2) the sharing between range states of information regarding devil's claw harvesting, trading and monitoring; 3) gaining a better understanding of the roles of all stakeholders; and 4) raising the profile of the devil's claw industry in Namibia and regionally. Additionally, the active involvement of members of Producer and Processor Organisations (PPOs) in the workshop was in itself intended to develop their capacity.
- Primary producer organisations were represented by delegates from four conservancies, and a resettlement farm in a commercial district. Delegates were given a first-hand account of the progress made in training, monitoring and trading in these PPOs.
- In Zambia, there is no regulation of devil's claw harvesting. Harvesting practices are often unsustainable, and significant quantities of devil's claw (usually of poor quality) are sold to traders who bring it into Namibia. A ban on harvesting in Zambia was introduced in 2012. There is a desire on the part of stakeholders and the Zambian Government to establish the extent of devil's claw resources, give training to harvesters and regulate the industry.
- Devil's claw harvesting in south-eastern Angola is also not regulated, although the resource does not currently seem to be threatened. There is substantial unregulated trade in devil's claw, mainly to clandestine traders who bring it into Namibia's Kavango and Caprivi regions. Some Namibian residents also cross into Angola and harvest illegally. The Southern Africa Regional Environmental Programme (SAREP) is assisting the Angolan authorities to regulate the industry, and will arrange for training through the Ministry of Environment and Tourism (MET) and Namibian NGOs.
- Refresher training was given on the NPUDC (sustainable harvesting, monitoring, permits, and reporting requirements).
- The MET gave a presentation on trade statistics and permits. There is evidence of improved compliance with permit regulations since the revised devil's claw policy was passed in 2010.
- Entering the highly competitive American market is feasible, but cognisance must be taken of the regulatory environment, and of threats from alternative products and suppliers. Choosing the most appropriate value chain will be essential. No medicinal claims can be made, unless they are FDA-approved; the greatest promise lies with exporting devil's claw as an ingredient for the food supplement market (and the pet food market), or for processing in America into a high-end niche product.

### **Resolutions taken at the workshop**

- 1 In consultation with the Devil's Claw Working Group (DCWG), the MET will discuss the possibility that the attendance of a training session be made a precondition for the issuing of a harvesting permit.
- 2 The issue of multiple trader permits in designated areas in Namibia will be put on the agenda for the next meeting of the DCWG, and MET will be requested to give their inputs regarding the way forward.
- 3 Concerns regarding the protection of confidential information in documentation relating to phytosanitary certificates will be brought to the attention of MAWF.
- 4 SAREP will organise and fund a high-level delegation from Angola to Namibia, to interact with local actors.
- 5 WWF Zambia will lobby with affected communities and the Zambian authorities to raise the profile of devil's claw as a resource; organise producer groups and promote best practices for sustainability and quality; and approach MET and relevant Namibian NGOs for assistance, including human resources for training.
- 6 SAREP will also facilitate the revitalisation of the devil's claw industry in Botswana, and will facilitate interaction with producer groups in Namibia.
- 7 The DCWG will assess the data provided by MET, so that it informs their recommendations regarding policy and implementation.

The Namibian Devil's Claw Workshop was funded by MCA-Namibia through the Millennium Challenge Corporation.

## **Acronyms and initialisms**

|             |  |
|-------------|--|
| ACADIR      | Environmental Conservation Association and Integrated Rural Development<br>(Associação de Conservação do Ambiente e Desenvolvimento Integrado Rural) |
| BC          | Balyerwa Conservancy   |
| CBO         | community-based organisation   |
| CGG         | Community Game Guard   |
| CRIAA SA-DC | Centre for Research Information Action in Africa – Southern Africa Development and Consulting  |
| CRM         | Community Resource Monitor   |
| DCWG        | Devil's Claw Working Group   |
| INP         | indigenous natural products  |
| IRDNC       | Integrated Rural Development and Nature Conservation   |
| KA          | Kyaramacan Association   |
| MAWF        | Ministry of Agriculture, Water and Forestry  |
| MC          | Management Committee   |
| MCA-N       | Millennium Challenge Account Namibia   |
| MET         | Ministry of Environment and Tourism  |
| MTI         | Ministry of Trade and Industry   |
| NJC         | N#a Jaqna Conservancy  |
| NNC         | Nyae Nyae Conservancy  |
| NPUDC       | National Policy on the Utilization of Devil's Claw (2010)  |
| OKACOM      | Permanent Okavango River Basin Water Commission  |
| PPO         | Producer and Processor Organisation  |
| RBF         | Report Back Form   |
| SAREP       | The Southern Africa Regional Environmental Programme   |
| SHDC        | Sustainably Harvested Devil's Claw   |
| TA          | Traditional Authority  |
| TAMU        | Texas Agricultural and Mechanical University   |
| VRF         | Vergenoeg Resettlement Farm  |

## Contents

|   |    |
|---|----|
| <b>Workshop highlights and resolutions</b> .....  | ii |
| <b>Acronyms and initialisms</b> .....   | iv |
| <b>1 Introduction</b>   |    |
| Ms Penny Akwenye (CEO, MCA–N) .....   | 6  |
| <b>2 Overview of devil's claw and workshop goals</b>  |    |
| Dave Cole (MCA–N INP Manager) .....   | 6  |
| <b>3 Presentations from PPOs on devil's claw management and monitoring</b> .....                                  | 8  |
| <b>3.1 Devil's claw management plans (Kyaramacan Association)</b>   |    |
| Thaddeus Chedau and Johanna Mushavanga .....  | 8  |
| <b>3.2 Management decisions (Balyerwa Conservancy)</b>  |    |
| Pires Muzwalicaba and Beauty Manyando .....   | 9  |
| <b>3.3 Monitoring, and internal arrangements, buying points and traceability</b> .....                            | 10 |
| <b>3.3.1 Monitoring (including post-harvest impact assessment) (Nyae Nyae Conservancy)</b>                        |    |
| N!aici Kagece and /Aice N!aici .....  | 10 |
| <b>3.3.2 Internal arrangements, buying points and traceability (N#a Jaqna Conservancy)</b>                        |    |
| Ester Kleopas and Simon Olavi .....   | 11 |
| <b>3.4 Livelihoods and long-term harvesting from the same resource (Vergenoeg Resettlement Farm SHDC Project)</b> |    |
| Phillipus Gariseb and August Banda .....  | 13 |
| <b>4 The status of devil's claw in Zambia</b>   |    |
| Moses Nyirenda (WWF Zambia) .....   | 15 |
| <b>5 SAREP's role in supporting devil's claw in south-eastern Angola</b>  |    |
| Steve Johnson (SAREP) .....   | 17 |
| <b>6 Interim evaluation and questions raised (Day 1)</b> .....  | 18 |
| <b>7 National Policy on the Utilization of Devil's Claw (2010)</b> .....  | 19 |
| <b>7.1 Introduction</b>   |    |
| Louisa Mupetami (Directorate of Natural Resources Management, MET) .....  | 19 |
| <b>7.2 NPUDC refresher training</b>   |    |
| Karen Nott (KNECSc) .....   | 20 |
| <b>8 MET trade statistics and permits</b>   |    |
| Wilma Möller (Directorate of Natural Resource Management, MET) .....  | 25 |
| <b>9 Interim evaluation and questions raised (Day 2)</b> .....  | 28 |
| <b>10 Competitive Assessment and Market Entry Study of Devil's Claw in the US</b>                                 |    |
| Prof. Victoria Salin (Texas Agricultural and Mechanical University) .....   | 29 |
| <b>11 Key issues and the way forward: Resolutions</b> .....   | 35 |
| <b>11.1 Devil's claw in Angola and Zambia</b> .....   | 35 |
| <b>11.2 Multiple trader permits for one area</b> .....  | 36 |
| <b>11.3 The other 58% – how to reach individual harvesters</b> .....  | 37 |
| <b>11.4 A possible devil's claw harvesting ban in Caprivi Region</b> .....  | 38 |
| <b>11.5 Getting organised as the devil's claw industry</b> .....  | 39 |
| <b>12 Closing</b>   |    |
| Dave Cole (MCA–N INP Manager) .....   | 40 |
| <b>Annexes</b>  |    |
| Namibian Devil's Claw Workshop Programme .....  | 41 |
| Attendance list .....   | 43 |

## 1 Introduction

Ms Penny Akwenye (CEO, MCA–N)

On behalf of Millennium Challenge Account Namibia (MCA-N), Ms Penny Akwenya welcomed all workshop participants, recognising the respective roles and contributions they make in the devil's claw industry. She outlined MCA-N's rationale and strategy for addressing the challenges implicit in the Millennium Development Goals, and the importance of indigenous natural products (INP), and in particular devil's claw, for the livelihoods of rural Namibians. During 2012, N\$ 4.42 million was earned by harvesters who are part of the devil's claw Producer and Processor Organisations (PPOs).

- Strategic planning: devil's claw is found only in southern Africa. Namibia is currently the largest exporter, at 503 tonnes in 2012. With increasing trade from Angola and Zambia, there is a need for strategic planning and cooperation between a hub of countries to ensure the continued health of the industry.
- Prices paid to harvesters are still low, in part because of inadequate value addition. There is an urgent need in rural areas for cash income, especially for women. As women play a central role in devil's claw harvesting, the devil's claw programme is critical in MCA-N's overall strategy.
- The need for income should not override sustainability. If future generations are to benefit from devil's claw, sustainability must be at the core of all planning.
- All stakeholders should focus on making meaningful progress. It is of the utmost importance that in five years time, the industry is not still grappling with the same problems.

## 2 Overview of devil's claw and workshop goals

Dave Cole (MCA–N INP Manager)

**The aims of the workshop:** 1) refresher training; 2) sharing of information regionally; 3) gaining a better understanding of the roles of all stakeholders; 4) raising the profile of the devil's claw industry in Namibia and regionally; and 5) capacity building of PPO members.

- The two commercially important species of devil's claw are *Harpagophytum procumbens* and *H. zeyheri*. Both are protected in Namibia under the Nature Conservation Ordinance of 1975, and under similar legislation in Botswana and South Africa. Permits are required for all devil's claw-related activities. The harvesting season in Namibia is from 1 March to 31 October.

- While good progress has been made with training and organising harvesters, the overall industry is in need of attention. Botswana and South Africa are devil's claw range states, but have not been actively involved in collective initiatives since 2007/8.
- Sustainable harvesting of devil's claw requires that the taproot is left undamaged; that side tubers (which contain the active ingredient harpagoside) are harvested only from one side of the taproot; that the hole is properly filled after harvesting; and that the plant is given sufficient time (about three or four years) to recover before being harvested again.
- The medicinal properties of devil's claw have been known to the San/Khoi people of southern Africa for centuries. These properties were "discovered" in studies in Germany in the 1950s.
- The first major exports from Namibia took place in 1962. Since 1992, on average 430 tonnes of devil's claw have been exported annually.
- In 2012, 503 tonnes of devil's claw were exported; fewer countries imported devil's claw than has been the case in past years; Poland overtook Germany (now in second place) as the largest importer of devil's claw, with France in third place. The Sustainably Harvested Devil's Claw (SHDC) Project was initiated at Vergenoeg Resettlement Farm in 1997, with a yield of three tonnes; this has risen to a total of 215 of tonnes of SHDC from 23 PPOs in 2012.



PPOs were well represented at the workshop

### **3 Presentations from PPOs on devil's claw management and monitoring**

#### **3.1 Devil's claw management plans (Kyaramacan Association)**

**Thaddeus Chedau and Johanna Mushavanga**

- Access to the devil's claw resource is restricted to Kyaramacan Association (KA) members; they must undergo training, be listed on the harvesting permit from the Ministry of Environment and Tourism (MET), and be in possession of a harvesters' card.
- Training and registration is repeated annually by a KA field officer, after which registration cards are given to harvesters.
- The PPO's internal devil's claw policy and rules are reviewed annually and strictly adhered to.
- The KA Board is responsible for contracts, permit applications, communication and coordination, and inspection for organic compliance.
- Field officers, Community Resource Monitors (CRMs) and Community Game Guards (CGGs) are responsible for training and registration, monitoring, organising the supply of equipment, and the storage of harvested devil's claw.
- Sales and transactions records are kept by the responsible field officer. This process is supervised by the KA Board.
- Monitoring is conducted of harvesting activities, harvesting sites (in November, after the harvesting season), and the processing and storage of harvested devil's claw.
- The management plan has two components: by the supply chain (registering harvesters, equipment, buying points, contracts with buyer, record keeping) and the resource management (resource inventories, compliance with permit and reporting regulations, harvesting activities, monitoring). Examples of management interventions include reporting illegal activities to MET, suspending a village, applying for organic certification, and preventing "bakkie buyers" (illegal unregistered traders who travel in light utility vehicles and buy devil's claw piecemeal from harvesters, usually for very low prices) from operating in the KA area.

#### **Discussion**

- The management plan is currently only in English. It was recommended that it be translated into the local language.
- KA's main buyer is Ecoso Dynamics. Attempts to prevent bakkie buyers from operating include denying them permission to operate, informing the community that they should not sell to them, and informing MET officers if they do attempt to operate in the KA area. If someone who



does have a permit wishes to trade in the KA area, they should make themselves known to the KA Management Committee (MC), who will grant or deny the application on a case-by-case basis.

- Villages are denied the right to harvest in the KA area in areas where there is non-compliance with the KA policy and rules; where villagers have not had training; and where many harvest holes have been left open. This is decided upon by the KA board and implemented by the staff members.
- Only people living in Bwabwata National Park qualify for registration with the KA.
- There are 27 CGGs (men) and 16 CRMs (women) in the KA. Their role is to patrol the area and know what's happening on the ground. CGGs go on fixed patrols around villages, and 5-day patrols in the bush. They also go on joint patrols with MET officials.
- Regarding the question of whether one village can be removed from a group permit for unsustainable harvesting practices, MET has decided that each village in a conservancy must apply for a separate group permit. From 2013, KA group permits will be issued per village.

### **3.2 Management decisions (Balyerwa Conservancy)**

#### **Pires Muzwalicaba and Beauty Manyando**

- Balyerwa Conservancy (BC) is situated in Caprivi Region, south of Mudumu National Park in the Mudumu Complex. It was registered as a conservancy in 2006, and is currently applying for Community Forest status.
- Before 2011, harvesting was somewhat random. No training was offered, and harvesters were not organised. As a result, there were unsustainable and illegal harvesting practices, and a lack of knowledge regarding opportunities in the organised devil's claw trade.
- Integrated Rural Development and Nature Conservation (IRDNC) assisted with training for 59 BC members in 2011; only 34 of these went on to harvest. MCA-N donated equipment such as storage bags, stainless steel knives, and drying nets.
- BC has a contract with Ecoso, with a buying point at the BC Office.
- Harvesting and monitoring began in June 2011; about five tonnes of devil's claw was produced in that year.
- Post-monitoring in 2011 revealed that 384 plants (43% of the total) had been badly harvested. In 2012, harvesters were given supplementary training, and 207 BC members registered as harvesters. After bad harvesting was again detected in some areas, the BC MC decided to halt all harvesting activities in June 2012. At the end of 2012, the post-harvest report to MET showed that of four harvesting sites, two were deemed to be good, and two bad.

- The MET informed BC MC that no harvesting would take place in BC in 2013. The committee will continue to review results, and work on restoring the bad sites.

## **Discussion**

- Ecoso has a buying agreement with BC, but plays no direct role in harvesting and monitoring activities. They do what they can to streamline their relationships with communities.
- Bad harvesting sites are the consequence of inadequate training, and/or harvesters' failure to comply with regulations, despite their knowing them.
- The Traditional Authority (TA) has no direct role regarding devil's claw in BC, though they are directly involved in some other activities. However, TAs are represented on the MC.
- It is not possible to identify exactly which harvesters have been guilty of illegal harvesting practices. The permit is a group permit, and records are combined.
- Congratulations are due to the BC MC for admitting that there are problems, and for taking the brave decision to stop harvesting for 2012.

## **3.3 Monitoring, and internal arrangements, buying points and traceability**

### **3.3.1 Monitoring (including post-harvest impact assessment) (Nyae Nyae Conservancy)**

#### **N!aici Kagece and /Aice N!aici**

- There has always been a close association between Nyae Nyae Conservancy (NNC), the TA, and the Ju/hoansi San. The NNC Devil's Claw Project commenced in 2001; between 60 and 180 people take part in harvesting each year, producing from three to 11 tonnes.
- Since 2007, devil's claw from NNC has been organically certified (EcoCert).
- It is important to have efficient communication channels between CGGs and the MC. Some villages have in the past been prevented from harvesting, where unsustainable practices have been reported.
- Post-harvest monitoring is conducted to establish numbers of un-harvested plants, closed/open holes, and the extent of re-growth on harvested plants. This monitoring indicates where more training and stricter monitoring are required.
- Devil's claw storage bags are identified for conservancy, village, harvester number, bag number, and organic quality.



Simon Olavi (NJC) and N!aici Kagece (NNC)

### **3.3.2 Internal arrangements, buying points and traceability (N#a Jaqna Conservancy)**

**Ester Kleopas and Simon Olavi**

- Before the N#a Jaqna Conservancy (NJC) Devil's Claw Project commenced in 2006, there was no coordination of devil's claw sales, and harvesters typically received N\$2/kg to N\$3/kg for harvested material. The current price paid to harvesters is N\$20/kg to N\$22/kg; NJC additionally receives N\$2/kg to N\$3/kg as a Management Fee.
- There are between 450 and 500 registered harvesters in NJC; 23 tonnes of devil's claw were harvested in 2011, and 25 tonnes in 2012.
- NJC has its own set of Devil's Claw By-laws. These include the requirement that harvesters use stainless steel knives; that they dry the sliced devil's claw on nets, above the ground; and bans on poaching, bush fires, and unsustainable harvesting. The MC can warn, suspend or expel harvesters who do not follow the rules.
- In the past, individual arrangements between harvesters and transporters were a source of friction, with harvesters complaining that they had to give most of their produce to the transporters. Since 2012, NJC has assisted harvester groups with transport contracts, thereby increasing their bargaining power.
- There is a central container storeroom at Mangetti Duin, donated by MCA-N in 2012, which is also the central buying point in NJC. Scales (also donated by MCA-N) are used to weigh the devil's claw, and money is paid in cash to harvesters. Ecoso provided tax invoice books and office supplies. NJC is grateful to all donors for their assistance.
- NJC devil's claw has been organically certified since 2008 (Ecocert).

#### **Discussion**

- The cost of organic certification is high, but it is justified by the higher prices that organically certified devil's claw commands. KA, NNC and NJC have done excellent work in this regard, and are to be congratulated.
- Prices are determined at the beginning of the year, and are also affected by market conditions and the species of devil's claw being sold.
- It is difficult to determine the precise period for which a harvested plant must be left to recover before being harvested again. They should be left at least a year, but preferably longer. Although there is some evidence that suggests that plants can be harvested every year, the returns are then not economical. Harvested plants may take as long as five years to recover fully. Tubers are

food and water for the plant's own survival in harsh periods; environmental conditions are thus critical, and it is not easy to make generalisations about re-growth rates.

- CGGs and CRMs monitor when plants are ready to be harvested again, using the size of plants, flowering, and the development and number of seeds as indicators. Tubers that are not harvested continue to grow, but ultimately reach a maximum size.
- One can identify which plants have been harvested during the previous season by the lower level of sand to one the side of the plant, where the hole was dug out and refilled. The sand may also be softer on the side where harvesting took place. In some cases, harvesters do check the condition of the plant by partially opening it up. Local knowledge is important, however: community members will be certain, where outsiders have no idea.
- When harvesters themselves contract transporters, they stand a good chance of being treated unfairly. It is better for the MC to enter into an agreement with a reputable transporter, who will also be less likely to damage the produce, for example by exposing it to fuel or other contaminants. The harvesters still pay for transport, but a contract with the PPO encourages transparency and fair play. If the transporting vehicle breaks down, it is the responsibility of the transporter to fix it, and complete the delivery.
- There is an enrichment planting initiative in place, with harvesters tending small nurseries at home, with plants grown from locally collected seed. This is taking place in Omaheke Region, and is to be taken to other areas if it proves to be a success. There are constraints on enrichment planting, however, as it requires a great deal of time and effort to take the seedlings to planting sites in the field. Resource monitoring remains the most important means of ensuring sustainability. For most groups in community forests and conservancies, the first step is a resource assessment, to serve as the basis for the scientifically grounded establishment of the sustainable off-take.
- Information on harpagoside levels is contradictory and confusing, so it is difficult to identify superior phenotypes. In one plant, different tubers can have different levels of harpagoside; environmental conditions also play a role, as harpagoside production is affected by stress levels.
- Once a string of side tubers is taken, all the tubers in that string are harvested, irrespective of size, as none will survive. Furthermore, some small side tubers have high levels of harpagoside, as do the connecting strings themselves.
- Harvesting quotas are apportioned to individual harvesters in different ways in different areas. Where sustainable quotas have been established, in some areas the amount individuals can harvest is controlled on a bag basis: for example, to be accepted, devil's claw must be must be in a clean new bag; harvesters may be given two bags, and when these are returned with devil's

claw in good condition, a further bag may be issued, if the quota allows. In other instances, quotas are given to villages. Overharvesting has taken place in some areas, and shops have been known to stock and sell white bags, which undermines bag-based harvesting control. Different systems will be appropriate in different places.

- MET does not set quotas for individual harvester groups – this is done by the PPOs. A purchase agreement between a conservancy and a buyer includes a minimum amount to be delivered; once this target has been met, negotiations can be entered into regarding possible further harvesting.
- MET issues permits, but in Caprivi Region, people are now crossing into Zambia to buy material there. MET is therefore considering a ban on all harvesting in Caprivi Region for three years.
- Part of the problem in Caprivi Region is that there are registered PPO members who are part of group permits, and who have received training, but then non-members get individual permits issued directly to them by MET. Larger conservancies are better placed to exclude these non-members from harvesting areas, but for smaller conservancies (of which there are many in Caprivi) this is difficult.
- Devil's claw cannot be isolated from dominant social issues. Experience in Caprivi (and elsewhere) tells us that the problem extends beyond the resource: people need an income, and rules and regulations are not enough – desperate people will do whatever it takes to survive.

### **3.4 Livelihoods and long-term harvesting from the same resource (Vergenoeg Resettlement Farm SHDC Project)**

#### **Phillipus Gariseb and August Banda**

- The Vergenoeg Resettlement Farm (VRF) Sustainably Harvested Devil's Claw Project commenced 1998, with the assistance of the Centre for Research Information Action in Africa – Southern Africa Development and Consulting (CRIAA SA-DC). Beforehand, harvesters were paid N\$2/kg to N\$3/kg for dried devil's claw; now they receive N\$20/kg to N\$23/kg, with a management fee going to the PPO.
- PPO members decide whether or not, and where to harvest devil's claw (in 2002, harvesters decided not to harvest because of poor rains).
- The registration of harvesters is dependent on their receiving training.
- Only about half the plants at any harvesting site are harvested; the rest are left for another season.
- Harvesters monitor each other's performance, and give advice where necessary.
- It is in harvesters' and the PPO's interest to have a contract with a transporter.

- Full devil's claw bags are stored at the central storeroom; cash income is derived through sales to an agreed buyer. In 2011, 1 912 tonnes were sold, generating an income of N\$53 533; in 2012, 1 219 tonnes were sold, generating N\$36 570. The average income per harvester in 2012 was about N\$850, compared to about N\$240 in 1998.

## **Discussion**

- VRF is a resettlement farm within commercial area, not a conservancy; harvesters are not given specific areas in which to work, but go out as a group and work together. The group as a whole is responsible for harvesting sustainably, not individual harvesters. This enhances their sense of ownership of the resource. The importance of this sense of ownership is borne out by the fact that they themselves have in the past elected not to harvest at all.
- “Bakkie buyers” from Namibia are also a problem in Zambia. In Namibia, some traders have been issued with trader permits for over 10 years. This is a small group, and they are not the problem, as they have shown long-term commitment to the industry. However, some 200 to 300 trader permits are issued every year, which suggests that many see devil's claw trading as a “quick buck” option, without having any commitment to the future of the industry. Having an agreed buyer helps sellers to operate from a position of strength; bakkie buyers can undermine this.
- Where individuals are not complying with sustainable harvesting regulations, harvesting has been stopped. It seems harsh, however, that the actions of a few disadvantage many. In the KA, residents of one village disobeyed the rules. With MET approval, all residents in this village were banned from harvesting, and have been for three years. The point is that the village as whole must take responsibility, as some have done, by confiscating the registration cards of offending individuals.
- When an entire region is being depleted, however, more drastic steps might be required. A survey conducted in Caprivi Region by MET found multiple open holes, suggesting that the resource has been seriously depleted throughout the region. A further complication is that the national definitions of regions do not always coincide with other distinctions. For example, KA operates in Bwabwata National Park, and is thus also partly in Kavango Region.
- It is understandable that individuals who need quick cash sell to bakkie buyers. Part of the answer is for PPOs to build up a reserve of funds to purchase devil's claw from individual sellers. There is no quick fix for the problem, however, but over-regulation is not the answer. A sense of ownership is critical, and ideally, people should make informed decisions about their own resources.

## **4 The status of devil's claw in Zambia**

**Moses Nyirenda (WWF Zambia)**

- In siLozi, devil's claw is known as *seto*, or *malamatwa*. It has been used by the Lozi, Subiya, Mafwe, Shanjo and Totela people of south-western Zambia for at least 200 years in medicinal concoctions, amongst other things for sexually transmitted infections and stomach pains, and to terminate pregnancies. It has been harvested for commercial purposes since 2005, initially around the border settlements of Sesheke and Imusho.
- In 2012, the Forestry Department imposed a moratorium on devil's claw harvesting due to concerns about unsustainable harvesting and unfair trade practices.
- Devil's claw's known distribution is throughout the southern and western border regions of Zambia, where the human population numbers about 500 000.
- There are numerous threats to devil's claw in Zambia. There is no policy to regulate harvesting or trading, the species is not specifically protected, and there is no permit system. Because devil's claw is sold for the equivalent of about N\$4/kg in Zambia, vs. over N\$20/kg in Namibia, significant amounts are exported into Namibia by bakkie buyers.
- Harvesting is not controlled, and no assessment has been made of stocks; there are no community structures for regulating the harvesting of devil's claw.
- In the absence of training, product processing is poor, and product quality is low.
- No research has been undertaken to establish the growth season, growth rates, or harpagoside levels.
- The lack of certification is a cause for concern, as the end-users are people.
- To begin to address these issues, a new Forest Bill is to be presented in Parliament in 2013 and a statutory instrument is being drafted to expand the list of protected plants.
- Trade frameworks are being developed to ensure conservation, sustainable harvesting, the protection of traditional harvesters, compliance with international law, and the equitable sharing of benefits along the value chain.
- In order to build capacity, training is to commence during 2013 focusing on harvesting, processing, administration, and partnerships with community-based organisations (CBOs) for joint forest management.
- Zambia would like to cooperate with Namibian NGOs in establishing a coordinated regional framework for devil's claw and other non-timber forest products. Funds have also been made available to conduct a devil's claw inventory by March 2013.

## Discussion

- There is an apparent contradiction between devil's claw harvesting being "illegal", despite there being no regulations. In practice, Community Resource Boards deal with natural resources in protected areas. They also have linkages to IRDNC, which has helped with capacity building. Under the Zambian Barotsi Royal Establishment, TAs can also make use of the powers and functions of indunas regarding natural resources – an arrangement that will be incorporated in the new Act.
- There is an urgent need to focus on devil's claw training. A training strategy has been developed, involving the training of special trainers, who will act as trainers of trainers in their areas. Crucially, the Forest Department does have funds available to train the trainers.
- It is hoped that within a few years, the amount of low quality material ("black devil's claw") emanating from Zambia will have been significantly reduced. An increase in the price paid for properly processed devil's claw will encourage harvesters and others in the trade to undergo training. As matters stand, the Zambian market cannot compete with the relatively well organised Namibian market.
- It has not yet been established exactly how the devil's claw industry will be set up and structured in Zambia. Certain administrative technicalities must still be dealt with, but the Zambian Government has evinced a desire to encourage value adding.
- Bakkie buyers currently come to Zambia from Namibia with Namibian import permits. They buy devil's claw, and export it on the strength of their Namibian import permits, exploiting the fact that rural communities are easily fooled by official documentation. Closer collaboration is needed between Namibian and Zambian authorities. A further dimension of the problem is that the borders are highly porous, and customs controls are easily circumvented.
- There are indications that a very substantial amount of devil's claw reaches Namibia from Zambia. If a ban on harvesting is piecemeal, it won't succeed. Nevertheless, the areas being targeted first are the main producing areas. Other producing areas that are not as involved in illegal/unregulated harvesting will be targeted in due course.



Steve Johnson (SAREP) and Moses Nyirenda (WWF Zambia)



## **5 SAREP's role in supporting devil's claw in south-eastern Angola**

### **Steve Johnson (SAREP)**

- The Southern Africa Regional Environmental Programme (SAREP) works with communities in the Cubango-Okavango River Basin for the protection of ecosystems and communities. The population density is higher in the more northerly parts of Cuando Cubango Province, but there are still communities living close to the Namibian border. SAREP has also been asked to become involved further east of this area. There are substantial devil's claw resources in the areas in Angola where SAREP operates.
- SAREP is now halfway through its five-year programme. It is a USAID-funded programme that assists the governments of Angola, Namibia and Botswana to manage the Okavango River Basin through the Permanent Okavango River Basin Water Commission (OKACOM), focussing on OKACOM systems, water management, biodiversity, and enhancing livelihoods. The challenges posed by climate change and HIV/AIDS therefore impact directly on SAREP's work. SAREP will introduce the Event Book System in Angola. It reaches clusters of villages, with one extension person being responsible for several villages.
- Poverty levels are high in the area, and communities are eager to use devil's claw to generate some income. No formal inventory of devil's claw resources has yet been undertaken, but indications are that devil's claw is plentiful.
- There is no formal devil's claw market in Angola. Residents who live close enough to the border cross into Namibia and sell it there, where it is assimilated into the devil's claw harvested in Caprivi and Kavango regions or sold directly to exporters.
- Although stocks in south-eastern Angola are currently healthy, ongoing unregulated harvesting could easily deplete them. The lack of a formal market also results in harvesters being paid lower prices than would be the case in a well organised market. Local communities and the central Angolan Government are both eager to see the development of a well regulated devil's claw industry.
- In some instances, Namibian residents cross into Angola, harvest devil's claw, and return with it to Namibia. The Angolan Government regards such activities as tantamount to poaching, and views them in a serious light. It is not known exactly how much devil's claw is reaching Namibia from Angola, but it is undoubtedly substantially more than the five tonnes identified in Namibia.
- From the point of view of the Namibian devil's claw industry, the infusion of unsustainably harvested material from Angola could damage Namibia's reputation for SHDC. There could also be the risk of introducing new plant diseases.

- In 2012, SAREP was approached by Angolan communities through the Environmental Conservation Association and Integrated Rural Development (ACADIR) to assist with formalising the devil's claw trade in south-eastern Angola. Meetings have been held with MCA-N with a view to coordinating interventions in Namibia and Angola. SAREP will:
  - facilitate a training of trainers course, similar to that being planned in Zambia, for ACADIR and interested community members;
  - organise exchange visits for key Angolan officials, ACADIR, and communities to give them first-hand exposure to management and marketing issues;
  - support local authorities in conjunction with ACADIR to develop management mechanisms; and
  - support the development of a multi-stakeholder management structure for devil's claw management in south-eastern Angola, using Namibian processes as a model.
- Neighbouring devil's claw range states have the opportunity to collaborate in the establishment of a devil's claw industry with improved benefits for harvesters and processors, and greater assurance of sustainability.

## **Discussion**

- It is a requirement that if you are exporting devil's claw, you must be able to prove its provenance. In Angola and Zambia, there is no policy in place, and ensuring traceability is more difficult where devil's claws is sold clandestinely, deep in bush. The permit system should assist with traceability; formalised markets in Angola and Zambia will also help.

## **6 Interim evaluation and questions raised (Day 1)**

The key issues raised during Day 1 were identified as relating to: factors affecting harpagoside levels; the just implementation of devil's claw bans; whether or not a devil's claw ban would apply to both East and West Caprivi, and the parts of Bwabwata National Park that are situated in Kavango Region; and the situations relating to devil's claw trade in Zambia and Angola.

## **Discussion**

- Consideration should be given to the feasibility and potential benefits of undertaking studies into environmental and harvesting impacts on harpagoside levels.

- Is it fair to ban devil's claw harvesting throughout an entire region? If despite widespread unsustainable harvesting, some PPOs can show that they are in fact harvesting responsibly, and in accordance with the policy, shouldn't they be exempted from any ban?
- Regarding a potential ban on harvesting in Caprivi Region, it should be noted that the KA operates throughout Bwabwata National Park, which is partly situated in Kavango Region. Would a ban in Caprivi Region apply to all of Bwabwata National Park?
- There is a need for greater regional support, cooperation and partnerships and for lessons learnt to be widely shared.
- Namibia has taken the lead in the sustainable management of devil's claw resources and the formalisation of the industry. If other range states do the same and the supply of sustainably harvested devil's claw increases substantially, is it possible that the world market could become saturated?
- It should be borne in mind that even in Namibia, SHDC accounted for only about 17% of total production, based on 2011 export figures.

## **7 National Policy on the Utilization of Devil's Claw (2010)**

### **7.1 Introduction**

**Louisa Mupetami ( Directorate of Natural Resources Management, MET)**

The Director of Scientific Services in MET, Louisa Mupetami, thanked MCA-N on behalf of MET for sponsoring the workshop.

- The mandate of MET includes the maintenance of biological resources, including devil's claw.
- Trade in devil's claw has a long history in Namibia, with the first significant exports having taken place in 1962. Today, 92% of devil's claw range states' exports come from or through Namibia.
- There have at various times been concerns over unsustainable harvesting methods. In 2000, there was the threat of *Harpagophytum spp.* being listed on CITES Appendix II, which would have had disastrous consequences for devil's claw



Louisa Mupetami (MET)

harvesters had the motion been carried. Stakeholders in the industry must therefore make the right strategic decisions, or allow others to decide on their behalf.

- The National Policy on the Utilization of Devil's Claw (2010) (NPUDC) outlines the rules governing the utilisation of devil's claw; if consistently adhered to, these rules will ensure that devil's claw continues to support communities. The stakeholders present at the workshop are uniquely placed to ensure the survival and growth of the industry, and should share the perspectives and lessons they gain from the workshop with their friends and colleagues.

## **7.2 NPUDC refresher training**

### **Karen Nott (KNECScC)**

The objectives of the NPUDC relate to monitoring; ensuring that harvesting is sustainable; management; and value adding. The Policy aims to balance the needs of people, on the one hand, and biodiversity, on the other. It outlines the responsibilities of stakeholders along the various supply chains:

- harvester → exporter;
- harvester → trader → exporter;
- harvester → trader 1 → trader 2 → exporter; and
- importer → trader → exporter.

### **Harvesting, processing and storing**

- Sustainable harvesting: use only side tubers and connecting strands from one side of the taproot (do not use the taproot – it is essential for the plant to live, and useless for selling); only harvest after flowering, every fourth year; only half of the plants in a site should be harvested; fill up the hole after harvesting; only harvest with a permit; comply with all reporting requirements.
- It is best to dig 20 cm away from the stem, with a sharp stick or a crowbar – not a spade.
- It usually takes about three years for plants to fully recover after being harvested. It is best for the community to work out their own system for allowing plants to recover – e.g. only harvesting half of the plants in an area, leaving areas fallow while harvesting as a group.
- Side tubers should be cut into thin slices with a stainless steel knife, and then dried on raised nets, with no sand or impurities.
- Packing and storing is critical, especially for organic certification. The dried slices must be well packaged and stored in a cool, dry place, off the ground (there must be no contact with contaminants).

## Discussion

- In the USA, nets are placed over drying products to prevent contamination by bird and bat droppings. These precautions are a requirement in the USA, and this is an issue that will have to be addressed if the USA market is to be penetrated.
- Even without direct research into the question, it is fair to assume that devil's claw plants do in fact make use of the side tubers. There is some evidence to suggest that in good years, plants can re-grow even if all side tubers are taken. However, removing all the side tubers increases the chances of damaging the taproot and killing the plant.
- The harvesting technique is the same for *Harpagophytum procumbens* and *H. zeyheri*. It was formerly believed that only *H. procumbens* contains the active ingredient harpagoside, but it has now been established that it is also present in *H. zeyheri*. There is no harpagoside in the taproot, but it is present in the strings joining the side tubers.
- A stainless steel knife must be used to slice the tubers because if any other knife is used, the slices will discolour. So that the slices dry out completely, they must be only a few millimetres thick, but not so thin that they break apart. The middle dries first, while the flesh close to the skin dries out the slowest. Thin slices address this problem. Drying the slices on raised nets assists the drying process, and also helps to avoid contamination. The quality of the dried devil's claw is compromised if these precautions are not taken.
- The slices lose about 90% of their weight in the drying process. This is similar to the percentage weight loss for most tubers, and for hoodia. Indications are that if well dried, devil's claw can be stored for years without adverse effects.
- Loose sand is brushed off the side tubers before they are sliced, but they are not washed, as water is a scarce resource; furthermore, the skin comes off in the drying process. If the side tubers were to be washed, it would add the burden of proving the water supply to be uncontaminated for potential exports to the USA. Mould can, however, come from the soil, though this can be dealt with in later harpagoside extraction. Tests on dried devil's claw have revealed the presence of undesirable substances, but these are removed by sterilisation before the extraction process.
- When traders receive bags of dried devil's claw, they check them and remove bad pieces and any foreign matter, before repacking them. For organic certification, there is no tolerance of any imperfection, and the original packaging must be secure.
- Exporters simply reject bags with poor quality devil's claw, as it is not worth risking a lower grade assessment for the entire consignment. This is a price that must be paid if overall quality is

to be improved. People need to stand together to raise the standards of what is bought and sold.

- Signs of poor quality devil's claw: If the bag is still moist, the material has not been properly dried; it will probably be yellow-green, rather than light brown, and will have a high microbial load. Very dark pieces indicate that the material has not been properly processed, or has been harvested while rains are still falling. The slices should not be too thick. Some bags contain sand and foreign matter, and even rocks. Sometimes bags include pieces of the taproot or main tuber – a sure sign of unsustainable harvesting.
- After drying, the first step in further value adding is chipping. International buyers currently demand slices, however, as this enables them to assess the quality of the material. If confidence in Namibian standards were to increase, greater local value adding would be possible.
- The presence of any pathogens such as salmonella or e-coli (both of which can occur in devil's claw) in a consignment of devil's claw to the USA would result in the rejection of the entire consignment. Random scientific tests are fast, and the authorities are under pressure to apply them.
- Sterilising the material with ultra-violet light before exporting it would avert the danger posed by pathogens. There is currently no ultra-violet sterilising facility in Namibia. Hoodia powder is sent to Cape Town in South Africa to be sterilised, and then exported from there.
- It would be very costly to obtain ISO certification in Namibia. The USA does not explicitly demand ISO certification, but does demand some acceptable proof of food safety. Generally, increasingly stringent phytosanitary requirements will have to be met for both import and export purposes.
- Standards and certification are very costly. With marula processing in Botswana, it works best to have centralised facilities in settlements, because people tend to stay in such settlements and go out from them to harvest. This might be more difficult in Namibia, however, as rural populations are more dispersed.



Presentations were followed by discussions ... which continued into breaks

- Although the Directorate of Veterinary Services has, in response to a query, indicated that it does not seem that foot-and-mouth disease is spread with devil's claw, when there is an outbreak of foot-and-mouth disease (usually in Caprivi Region), a veterinary certificate is required to transport devil's claw. The same applies to thatching grass.
- Globally applicable standards will require a more organised devil's claw industry. There is a clear link between the level of training and the quality of processed devil's claw, and it is encouraging that there has been a constant improvement in quality.

## **NPUDC refresher training (cont'd.)**

### **Permits**

- As a both *H. procumbens* and *H. zeyheri* are protected species, devil's claw activities need a permit at all levels of the supply chain.
- The old policy had a section that applied to registration for traders and exporters, but it was not applied. The new policy has clear regulations, however, and these are being applied.
- Traders and exporters must register with MET before applying for a permit. Registration entails completing a written multiple answer test on the policy (pass mark: 15 correct answers out of 20); registration is valid for three years. (This registration process does not apply to harvesters, as they register with their respective CBOs after receiving training.)
- The harvesting season lasts from 1 March till 31 October. In Namibia, there is substantial seasonal variation. Many areas are not ready for harvesting by 1 March. In practice, active harvesting must end in September, as the devil's claw must be dried, bagged and sold before 1 November.
- Harvesters, traders and exporters must ALL complete a Report Back Form (RBF). Subsequent permits are only issued with proof of submission of an RBF. (Some applicants falsely claim to be first-time applicants to circumvent this regulation; this may work once, but will not be a successful long-term strategy.)
- Harvesters and traders must submit their RBFs by the end of November; export RBFs must be submitted within 14 days of the export taking place.
- Harvester permits can be either individual or group permits. They are not transferable, and must be with the harvester while harvesting. (In the case a PPOs which has obtained a group permit, harvesters carry their harvester registration cards issued by the PPO.)
- Applications for harvester permits must include written permission from the landowner / TA / CBO where harvesting is to take place (MET recommends that both the TA and the CBO sign).

- Trader permits are issued for specific areas (under the old policy, trader permits applied throughout the country).
- Export permits are issued per consignment.
- Exporters need a phytosanitary certificate from the Ministry of Agriculture, Water and Forestry (MAWF), and proof of registration with the Ministry of Trade and Industry (MTI). Exporters are also traders, so they require both export and trader (“buy and sell”) permits.
- When carrying one’s own devil’s claw, no transport permit is required; when transporting devil’s claw on behalf of someone else, a transport permit is required. However, traders and exporters who already have valid permits do not also require a separate transport permit.

## **Discussion**

- Devil’s claw that is not sold by the end October must be stored, and may only be sold during the following year’s season. It can, however, be exported throughout the year.
- The registration of harvesters by CBOs is not a legal requirement. It is an additional activity undertaken by the CBO to assist with record-keeping.
- MET is indeed recording and collating the information contained in RBFs. It is nevertheless recommended that those submitting RBFs keep a photocopy to prove that they have done so.
- For reasons of confidentiality and the sensitivity of business intelligence, exporters might be unwilling to indicate in RBFs to whom they have exported devil’s claw. However, it is a requirement that they do so, and they must take it on trust that such information is regarded as strictly confidential by MET.
- Phytosanitary certificates issued by MAWF also require the name and country of the importing body; there are concerns that the importance of confidentiality is not fully appreciated in all MAWF offices, however. These concerns should be brought to the attention of MAWF.
- Although there are currently no phytosanitary testing facilities at Namibia’s borders, such facilities are being installed, and will soon become operational. In Botswana, import permits require that the exporting country’s phytosanitary requirements be specified.
- For group harvesting permits, membership of the group is defined by the list submitted by the group, even if that group has no formal legal standing.
- Not as much progress has been made with commercial conservancies as has been with communal conservancies. The individual rights of the landowner are stronger than the collective rights of the conservancy, so it is probably better to have the landowner sign the application for a harvesting permit than the committee of the commercial conservancy.



- The NPUDC falls under the Nature Conservation Ordinance of 1975; MET's protocols specify procedures for implementation of the policy. To date, there have been no legal challenges to the policy.
- The rationale behind not requiring harvesters to write a test and register, as traders are required to do, is that a lack of understanding of English could effectively prevent many harvesters from registering. Furthermore, harvesters generally live substantial distances from registering MET offices, and it is more realistic to send one group representative to register the entire group, than for harvesters to register individually.
- The registration test for traders and exporters is administered by a regional MET officer. Applicants must obtain a copy of the Policy, and arrange a time for the test to be taken.
- Registration with the MET is valid for three years. If there were to be any substantial change in the policy during this period, registered traders would have to write a new test.
- An individual could be both a harvester and a trader, but would need both permits.
- Different prices are paid for different devil's claw species (generally more for *H. procumbens* than for *H. zeyheri*). Initially, the market demanded exclusively *H. procumbens*, as it was widely known. As the market developed, *H. zeyheri* also came on line, as it also contains harpagoside. *H. procumbens* is still better known, however, and so it commands a higher price; when stocks of *H. procumbens* run low, the price goes up.

## **Resolution**

Concerns regarding the protection of confidential information in documentation relating to phytosanitary certificates will be brought to the attention of MAWF. (Action: Dr Ben Malima)

## **8 MET trade statistics and permits**

### **Wilma Möller (Directorate of Natural Resources Management, MET)**

- The NPUDC is based on the Interim Policy of 2009, which was reviewed and approved in 2010. It makes changes regarding permits, forms and issuance processes. Indications are that the new policy and protocols for permit issuance have resulted in improved traceability and compliance.
- In 2008, 478 harvester permits were issued; this fell to 198 in 2009, but by 2011 had risen to 238. This was associated with fluctuations in the prices paid to harvesters for devil's claw (2008: N\$15/kg; 2009: N\$8/kg indicative prices). (The fact that group permits are issued means that number of permits is not the same as the number of harvesters.)

- Caprivi Region has consistently produced the greatest volumes of devils' claw; production rose from just under 50 tonnes in 2010, to almost 250 tonnes in 2011.
- Caprivi and Otjozondjupa regions, which both have high population densities and high levels of poverty, produce far more devils' claw than other regions. For harvesters in Khomas Region, for example, devils' claw harvesting is a sideline; in Caprivi and Otjozondjupa regions, it is often the only source of income.
- The number of trader permits fell from 270 in 2008, to 75 in 2011; the percentage of these permits that were used rose from 33% in 2008, to 67% in 2011. It appears that there are now fewer opportunistic traders involved than there were in the past.
- Under the old policy, companies could hold one permit, but have several people trading on this permit; the new policy requires each trader to have a permit.
- The ratio of quantities of devils' claw legally harvested, to quantities exported, stood at 0.48 in 2008; it fell significantly in 2009 and 2010, but recovered to 0.55 in 2011. The aim is to achieve as close as possible to a 1 : 1 ratio (i.e. all exports are legally harvested).
- In 2008, export permits were issued for 658 tonnes of devil's claw; this fell in 2008 and 2009, but recovered to 659 tonnes in 2011.
- Between 2008 and 2012, a total of only 18 import permits were issued for imports from Angola, Botswana and Zambia, for a total of less than 189 tonnes; three import permits were issued for re-imports from South Africa.
- Non-compliance with RBF requirements: In 2008, failures to submit RBFs outnumbered compliances by 153 to 117; by 2011, the situation had reversed, with compliances outnumbering non-compliances by 62 to 13. In 2011, there were also no detected cases of trading without a permit, and no lost permits.



Wilma Möller (MET)

## **Discussion**

- A significant amount of devil's claw enters Caprivi Region from Zambia. The figures for quantities harvested include some of this in Caprivi's production.
- Production figures are based on the RBFs. In Kavango Region, it is suspected that there is also significant illegal harvesting. Some training support was provided there in 2007/8, and then

again in 2010/11, but none was given in the intervening years. Devil's claw is probably also entering the region from Angola.

- The large amount of illegally harvested devil's claw that is being exported can in part be explained by traders not signing harvesters' RBFs. (One ploy is that they claim not to have money with them, and then they send the money later, without being present to sign.) Furthermore, having multiple trader supply chains within a region makes it easier for gaps to occur around trader permits.
- It also happens that harvesters sell to traders and enter the quantities on their own RBFs, but that it subsequently transpires that the traders in question do not have permits.
- RBF-based records do lag behind, as some delays are inevitable. Records should be updated when information relating to a previous year finally arrives. Another factor is that material is harvested in one year, but only exported the following year. To properly interpret the data, one should look at the totals over a period of about four years – and doing so does indicate that there is a gap in data capture.
- Illegal harvesters who are apprehended have their devil's claw confiscated by the regional MET office, and may be given a small fine. Illegal traders also have their devil's claw confiscated; a case is opened against them, and they will not be issued with trading permits in the future.
- The number of permits issued reflects the price being paid for devil's claw. The price is influenced by market factors of supply and demand. After 2008, warehouses in Europe were full, as there had been substantial exports. Then came the international recession, so there was a dramatic drop-off in demand, and in the price paid to harvesters. Having a better organised industry that could control supply would minimise price fluctuations.
- The calendar year is not necessarily the ideal timeframe to reflect all events related to a harvesting season. However, the main focus of analysis was for trade within Namibia, where permits are issued by calendar years.
- Information about prices being paid by international buyers to exporters is highly sensitive, and confidential. Whatever this price is, it must cover the significant costs incurred by exporters, and reward them for the financial risk they take. Prices are also highly variable, as they are affected by quality and exchange rates, and vary for individual shipments. Furthermore, fluctuations in demand increase or suppress prices from one year to the next.
- The NPUDC does not require conservancies to sign contracts with single buyers, but it can be to the advantage of a conservancy to do so. When entering into a contract with a single buyer, a conservancy has some bargaining power regarding the price. International buyers undermine exporters by playing one off against the other. There is a need for an organised industry that

allows for some degree of control over export prices. Stakeholders should be aware, however, that good exchange rates (from an exporter's point of view) do not guarantee good local prices indefinitely. The Devil's Claw Working Group (DCWG) should assess the data provided by MET, so that it informs their recommendations regarding policy and implementation.

## **Resolution**

The DCWG will assess the data provided by MET, so that it informs their recommendations regarding policy and implementation. (Action: DCWG)

## **9 Interim evaluation and questions raised (Day 2)**

The key issues raised during Day 2 were identified as relating to: contamination; understanding quality and maintaining it; group permits; managing difficulties; group permits for villages or entire PPOs; confidentiality of information at regional MAWF offices; multiple trader permits issued for one area; individual harvesters – issues around training, monitoring, regulation, compliance, and legality; and getting organised as the devil's claw industry.

## **Discussion**

- There are problems associated with multiple trader permits being issued in one area. This is related to the need for training on sustainable harvesting and RBFs for individual harvesters.
- When issuing harvesting permits, MET staff members are supposed to hand out forms and a NPUDC booklet, explain how to complete the forms, and explain the basics of sustainable harvesting and reporting requirements. MET officers should be aware of the fact that at the most fundamental level, their role is to protect the biodiversity of the country, not just issue and receive forms.
- The maintenance of biodiversity and protection of devil's claw resources are likewise in the interests of exporters. Focusing on the collective bargaining power of harvester groups is one aspect of getting the devil's claw industry organised. MCA-N support to PPOs is important in this regard. There are many logistical issues to be dealt with in arranging for training and bringing people to central meetings. The role of an embracing regional forum of PPOs will also be important.

- In the USA, producers generally want to know how they are performing relative to their competitors. A similar assessment against a benchmark could also be useful for devil's claw enterprises.
- In pressing for an organised industry, devil's claw stakeholders should not lose sight of the principles of a free market.
- Developing a devil's claw industry will entail focussing on local value adding and encouraging local /regional demand.

## **10 Competitive Assessment and Market Entry Study of Devil's Claw in the US**

**Prof. Victoria Salin (Texas Agricultural and Mechanical University)**

The complete report of this study, headed by Prof. Salin, is available on the MCA-N website:

Competitive Assessment and Market Entry Study of Devil's Claw in the US Nutraceutical / Herbal Supplement Market

[http://www.mcanamibia.org/files/files/PDFs/INP Innovation Fund/Competitive Assessment and Market Entry Study of Devil's Claw in the USA.pdf](http://www.mcanamibia.org/files/files/PDFs/INP%20Innovation%20Fund/Competitive%20Assessment%20and%20Market%20Entry%20Study%20of%20Devil%27s%20Claw%20in%20the%20USA.pdf)

The study focused on the private sector, and the themes of the value chain, the market size, and the regulatory environment; it also made recommendations.

- The market size in the USA for joint pain relief and anti-inflammatory products is US\$ 5 billion. This is for both humans and pets.
- The regulatory environment for pharmaceuticals (drugs) is very closely controlled, and it would be unwise to attempt to offer devil's claw as a drug, or to make claims that would imply that it is one.
- Dietary supplements enjoy special exemption as foodstuffs. Nevertheless, imports of foods are under new scrutiny for food safety. There is no special category for supplements to animal feeds.

### **Value chains**

- The value chain must be understood and compensated at all levels, including for example legal practitioners and retailers.
- One chain competes against all others; value chains are global, with much occurring in China, India, and the USA.

- Conversion to the final form usually takes place in the USA; if a company's brand name is attached, they want control of final process. Much also can be outsourced by providing the raw material, together with instructions (gel, powder, pill etc.).
- Consider how the product will be sold: Through chain stores? Positioned where on shelves? Via the internet? This aspect can be dealt with by someone along the value chain.
- Retail in the USA is split between large chain stores, boutique health stores, and the internet, with the internet accounting for half of the US nutraceutical market. The product must have a good value proposition to work, as prices are easy to compare.
- Retailing includes decisions about the image and associations that are to be projected. The value chain offers different opportunities at different levels. A decision must be made about which level of the value chain presents the best options for profit.
- Raw material formulation: trade routes to the USA are efficient from China and India, while sourcing from Africa is costly.
- Manufacturing: quality assurance and preserving finished goods in international trade will be challenging.
- Packaging, presentation and image: utilise your image, alluding to traditions, culture and health (but don't make outright claims); certify Namibian/African origin, and consider contracting with US-Canadian partners who are well acquainted with the market.
- The animal feed market in the US is enormous, and now even extends to fresh food. Exporters could consider supplying devil's claw to existing companies as an ingredient (it is already used as one in dog foods for older dogs).
- Specialty brands for the human market: supply through existing brands. Some have products from Chinese medicine, and the South American jungle, but not yet from Africa – this might present an opportunity. The product and a recipe could be supplied to a major manufacturer – this would be best for large volumes, and economies of scale.
- Consider working through brokers ("solutions providers"): they know the ins and outs of the trade.
- Working through contract manufacturers: chain optimisation – all partners add value, all are rewarded in proportion to risk; transparency and negotiation; commitment and trust; your chain must differentiate and have better results than similar products.



Prof. Victoria Salin (TAMU)

## **Recommended market entry strategy**

- Niche of highest quality, traditional health remedies: Phased approach: enter with contract manufacturing.
- Enter through raw material supply: combinations or blends with Boswellia and other natural supplements; position in contrast to other natural substitutes (e.g. resveratrol).
- Establish safety – effects on pregnancy (human and animal).
- Work toward the pet market in the longer term: first research to prove to be non-toxic, then show some efficacy for dogs, especially; use the veterinarian channel, not the mass market.

## **Discussion**

- The recommendations are most likely to apply to an exporter, but a producer group could contract an exporter; they are relevant to the private sector, not the government.
- The entry cost of custom manufacturing in the US is probably in the order of US\$5 000 for a small batch. Producer groups' interests might be best served in the long term by providing an ingredient, and focussing on an exclusive, high-end association.
- The pet market is no less stringent regarding its quality requirements than the human nutraceutical market.
- No medical testing is required for human food supplements – notice must be given that use has been shown it to be safe; no medicinal claims may be made.

## **Presentation (cont'd.)**

### **(Competitive Assessment and Market Entry Study of Devil's Claw in the US)**

#### **Competitive landscape**

- Define competitors by anti-inflammatory properties.
- Natural substitutes to devil's claw: glucosamine, chondroitin, a sulphur-based substance; also unproven botanicals: bee pollen, echinacea, flaxseed, ginger, ginseng, yucca. These limit the profit potential of new devil's claw products; don't expect to be able to control your price.
- The US market is large – there are over 30 million people who are 60+ years old, plus the lifestyle market, joggers, etc. The pain relief market: there are 50 million arthritis sufferers.
- The joint pain market should grow at about 5% annually; there is not currently much focus on sustainability, about which there is less awareness in the US than there is in Europe.

- There are also non-natural alternatives, such as aspirin – devil's claw must be differentiated as natural.
- The pet market demands high quality. Recently, there was a bad experience with a Chinese product, which was almost more of a scandal than the melamine-contaminated milk disaster. Devil's claw is also known to have adverse effects for breeding animals.
- Threats to profitability: competitive rivalry; bargaining power of suppliers; bargaining power of customers; new entrants; substitute products. The biggest threat: the vast number of substitutes, and also new devil's claw market entrants.

## **Discussion**

- For some, particularly in very religious communities, the connotations of “devil's claw” might not be positive. Furthermore, another brand using a different species already uses the name.
- There are costs associated with changing a name. “Devil's claw” was in use before 1997, and is therefore now regarded as being acceptable. An option could be to continue to use “devil's claw”, but brand the product differently. However, if a new name were to be chosen, a marketer could go through the process of getting acceptance for the new name.
- The product should be differentiated by its packaging and presentation. The current market preference is for gel tablets, and also liquids. Some companies are interested in the sustainability issue, but it is not a major selling point in the US. In the future, however, it could become more important. Certifications (organic, Fair Trade, Fairwild) are significant in high-end niche markets.

## **Presentation (cont'd.)**

### **(Competitive Assessment and Market Entry Study of Devil's Claw in the US)**

#### **Regulatory environment**

- The onus to provide proof of safety for any food or feed sent to the US lies with the importer. Documentation that the food has been produced with due regard for safety is essential. No microbial infection is tolerated.
- GHP (Good Handling Practice) / GMP (Good Manufacturing Practice) compliance is a minimum requirement. (Contract manufacturers in the US are GMP-certified.)
- A new regulation under consideration is for pre-market notification of a “new” dietary ingredient. This will require submission of a history of use, and the assurance that the product can reasonably be expected to be safe. Some legal support would be needed, but it would not be too onerous a requirement, as it would not entail any new research.



- Once government requirements have been satisfied, there are still major demands from buyers, who have enormous power in the US.
- A drug is defined as a substance that is designed to change the body, or cure disease. Devil's claw should therefore not claim to change the structure or function of the body; although there are some gray areas in the law, terms like "treatment" and "alleviate pain" should be avoided.
- For the veterinary channel, devil's claw should be presented as a feed ingredient. Pathogen control and toxicity studies are crucial for this channel.
- Competitive landscape: closely differentiate the product by country, rename devil's claw to something else.
- Given the threat posed by substitutes, it might be worthwhile to conduct a study to satisfy consumers.
- Regulatory issues: Government regulation constitutes a threat. To avoid risk of losing large shipments, send smaller consignments.

## **Conclusion**

- The US market is large and growing, but entering it will require commitment, organisation and creativity.
- Main conclusion: A good foundation seems to have been laid for devil's claw to enter into the high-end niche market.

## **Discussion**

- The equine industry is very closely controlled in the US. The fact that devil's claw is a controlled substance for horses, but not people, may be connected to devil's claw's adverse effects on breeding.
- Those entering the US market must be willing to make small margins, and generate profit through permanence, and the extent of product differentiation.
- It is costly to source from Africa because there is relatively little two-way trade between the continent and the US. Existing brokers don't really have links with Africa, whereas arrangements are already in place with Asia. This makes working through Asia logistically more cost-effective.
- When considering who in Namibia would benefit most from entering into the US devil's claw market, one should think of the entire value chain, not only individuals along the chain. It may be that in the short-term, retailers in the US may benefit the most, but everyone along the entire

chain benefits; it is counterproductive to start by competing within the chain. The best option may be along the sustainable, ethnic value chain. Focus on getting a reliable long-term business.

- It is not realistic to expect massive profits. Competing with existing manufacturers, for example from China, is unlikely to succeed. If going into an existing brand line, one must be willing to share. The mark-up in the nutraceuticals market is typically in the order of 12% to 15%, which is relatively high. Retailers usually put on 100%, so if a product retails for US\$10, only US\$5 is left for the rest of the value chain. Packaging, manufacturing transport and other functions may account for over 80% of this US\$5, leaving less than a dollar for the material itself. One should not overestimate the value of ingredients in the final product. On the other hand, there is very little devil's claw in one bottle of pills, and no reason to have a pessimistic point of departure.
- Substitutes pose a high threat to devil's claw. Pharmaceutical laboratories, particularly in China, produce synthetic harpagosides. The study found 13 products containing harpagosides; many enterprises offered to supply them.
- Devil's claw appears to be very stable. There is no legal requirement to state an expiry date for supplements, but giving one could be part of a marketing strategy.



## 11 Key issues and the way forward: Resolutions

### 11.1 Devil's claw in Angola and Zambia

- It is clear that devil's claw is entering Namibia from adjoining range states, in particular Angola and Zambia. There is a need for collaboration between Namibian, Angolan and Zambian stakeholders and authorities.
- Namibia should be congratulated for having a strong policy and organisational framework in place. SAREP will be actively engaging with stakeholders in Angola's Cuando Cubango Province with a view to arranging training-of-trainers courses, assisting with governance, developing structures, formulating policies, and mobilising communities; in so doing, SAREP will strive to emulate the standards that have been set in Namibia. The SAREP programme has two years to run; while it is unrealistic to expect to finally address all issues within this timeframe, much can and must be done. SAREP intends to bring a high-level delegation from Angola to Namibia, to interact with local actors.
- It is essential that progress be made regarding the devil's claw trade in Zambia. Zambia is *de facto* already involved, particularly in the Sesheke area, and no matter what is said or done, communities will continue to produce devil's claw. In order to benefit all in the industry, attention must be given to quality and sustainability. Communities must be organised and producer groups established, and introduced to reputable foreign buyers so that they will be less likely to sell to exploitative bakkie buyers.
- WWF Zambia will approach MET and NGOs such as IRDNC for assistance, including also human resources for training; it will strive to formalise markets for Zambian buyers and buyers from other countries, notably Namibia, and to engage directly with exporters. The Zambian Government should be encouraged to address devil's claw issues as a matter of urgency.
- It is important that Botswana be re-engaged in the formalisation of the devil's claw industry. SAREP will assist with rehabilitating the industry in Botswana, and intends to facilitate interaction with producer groups in Namibia, in order to raise enthusiasm for the trade in Botswana.
- WildFoods intends to focus on the management of devil's claw quality in Botswana.
- In the USA, marketing focuses on region or continent, rather than specific country of origin. Devil's claw could be marketed as being from southern Africa. On the other hand, if sustainable harvesting practices are foregrounded in the product image, explicitly Namibian origin could be important.
- A body such as a regional working group is needed for regional collaboration on strategic trade issues. SAREP is a transboundary programme, and shares this perspective. The body could be

entirely new, or a resurrected version of the now-defunct Regional Devil's Claw Working Group. SAREP undertakes to finance the meetings required to constitute the new body (or re-establish the old one).

- Mechanisms should be put in place to ensure that information regarding developments in the national and regional devil's claw industry flows to stakeholder communities in producer areas such as Caprivi Region.

## **Resolutions**

- 1 SAREP will organise and fund a high-level delegation from Angola to Namibia, to interact with local actors.

(Action: Steve Johnson, SAREP)

- 2 WWF Zambia will lobby with affected communities and the Zambian authorities to raise the profile of devil's claw as a resource; organise producer groups and promote best practices for sustainability and quality; and approach MET and relevant Namibian NGOs for assistance, including human resources for training.

(Action: Moses Nyirenda and Ngula Mubonda, WWF Zambia)

- 3 SAREP will facilitate the rehabilitation of the devil's claw industry in Botswana, and will facilitate interaction with producer groups in Namibia.

(Action: Steve Johnson, SAREP)

### **11.2 Multiple trader permits for given areas within Namibia**

- The opinion was expressed that the Namibian devil's claw industry needs competition, and that caution should be exercised when trying to prevent more than one trader from operating in an area, as devil's claw is a national resource, for all Namibians; monopolistic trade practices would attract the attention of the Competition Commission. The industry needs competition, as if one company has too much power, other stakeholders become weak. Conservancies should be aware of this, and can approach the Competition Commission to ensure fair competition.
- On the other hand, producers can improve their position by applying standards and protocols. Making arrangements with a buyer in advance can benefit the harvesters, and reduce the chances of their being cheated by unscrupulous dealers. Merely claiming that an open market is good fails to take account of realities on the ground.

- In other contexts, for example hunting, exclusive agreements are entirely permissible, and are in fact part of good management. Where a quota system is in place, this is easier to enforce. When discussing the issue, it should also be borne in mind that the interests of harvesters should be paramount.
- The fact that Namibia does not permit anti-competitive practices in no way implies that a conservancy or PPO does not have the right to enter into an exclusive contract with a buyer. While harvesters who are members of a PPO that has entered into an exclusive agreement with a buyer might be contractually bound to abide by that agreement, problems arise when other buyers, who have no agreement with a producer organisation or commitment to harvesters' long-term benefits, enter an area and tempt individual harvesters to sell for direct payment. This can also have implications for sustainability. It is a complex issue that should be taken up by the DCWG, and discussed by them with MET.

## **Resolution**

- 4 The issue of multiple trader permits in designated areas in Namibia will be raised in the DCWG, and MET will be requested to give their inputs regarding the way forward.

(Action: DCWG Chairperson)

### **11.3 The other 58% – how to reach individual harvesters**

- In 2012 42% of material traded was sourced from organised harvester groups.
- The view was expressed that in Caprivi Region, the issue is not only that many harvesters are not PPO-members, but that MET does not have the capacity to conduct stringent monitoring. The contrary view was that this is not the case, and that there would be no issue if all individual harvesters were willing to abide by the guidelines and policy. Wherever responsibility lies in this regard, however, the significant role of individual harvesters operating outside of organised groups, on private land and in open access areas, must be recognised. There is substantial support for and focus on PPOs, but a strategy to reach these individual harvesters is needed; land owners should also be reached.
- Part of the problem is that individual harvesting permits often cover far more devil's claw than an individual can possibly collect. The practice of one person getting a permit and then employing people to harvest continues, in spite of its being in contradiction of the policy. From MET's point of view, it could help if training to all harvesters could be realised. The possibility of

attending such a training session could be made a requirement for the issuing of a harvesting permit if found to be feasible.

- Community members from villages close to the PPO boundaries are known to enter these areas and harvest illegally. One strategy might be to identify these villages, and any other hotspots where illegal and unsustainable harvesting is taking place, and target them for training and law enforcement.

## **Resolution**

- 5 The MET discuss the possibility that the attendance of a training session be made a precondition for the issuing of a harvesting permit in consultation with the DCWG.

(Action: MET, Windhoek permit office)

### **11.4 A possible devil's claw harvesting ban in Caprivi Region**

- It would be unfair to put a blanket ban in place for all of Caprivi Region. Those conservancies that are in fact undergoing training and can show progress with sustainable harvesting should be exempt from any ban.
- MET has made it known that no decision has yet been taken regarding a ban. MET has agreed to send a delegation to Caprivi Region, undertake consultations with stakeholders, and make recommendations to the minister. The timing of this visit has not been finalised, but it will hopefully take place soon, as the harvesting season begins on 1 March. It is hoped that MET will consider exempting PPOs who have demonstrably complied with all regulations from any harvesting ban.
- The visit of MET to Caprivi Region should be seen as an opportunity to interact with stakeholders on the ground and become better informed about their concerns and needs. It would help the MET delegation to know what the ratio of PPO-registered harvesters to individual harvesters in the region is. Key issues should be brought together so that the industry can move forward. MET should consider working together with NRI and MCA-N to offer stakeholders in Caprivi Region and other actors the chance to speak on the issue. The focus should be on both people and biodiversity. Admitting that there might be a problem in Caprivi Region is in itself a step forward.

### **11.5 Getting organised as the devil's claw industry**

- There was general agreement that there is a need for the devil's claw industry to be better organised. While the current workshop has been a good example of constructive engagement and high-level interaction between stakeholders, the importance of everyday cooperation between actors at all levels should not be underestimated.
- Much of what has been discussed in the workshop relates to harvesting; an "industry" requires as much emphasis to be placed on value addition. In this regard, MCA-N has also been supporting efforts aimed at value addition, notably by investigating the potential of a factory to undertake devil's claw extraction, and the development of a marketing strategy including packaging and branding as a superior product, so as to command a premium price. These and other issues should be discussed by the DCWG and the proposed regional body, once it is constituted.
- When attempting to break into a market, due consideration should be given to the overall value chain. While there are arguments to be made for local value addition, in the case of the US market, it might be more challenging to export a final product. The choice of value chain should be left to individual exporters – some might prefer to take on the challenges associated with exporting a high-end final niche product; others might choose to offer bulk material, and be as price-competitive as possible.

#### **Resolutions (brought forward)**

- 6 Concerns regarding the protection of confidential information in documentation relating to phytosanitary certificates will be brought to the attention of MAWF.  
(Action: Dr Ben Malima)
- 7 The DCWG will assess the data provided by MET, so that it informs their recommendations regarding policy and implementation.  
(Action: DCWG)

## **12 Closing**

### **Dave Cole (MCA-N INP Manager)**

On behalf of the workshop sponsor, MCA-N, Dave Cole noted that the proceedings of the workshop are to be made available online on the MCA-N website. Prof. Victoria Salin's presentation on the potential for devil's claw in the US market will likewise be made available; electronic versions of the other presentations will be available on request. Some hardcopy versions of the proceedings will also be printed for participants who have no internet access.

He thanked all involved for their contributions to making the workshop relevant and worthwhile, and all who made presentations for their high quality. He shares the passion for the devil's claw industry that was abundantly evident in the workshop. He also undertook on behalf of MCA-N to give careful consideration to all recommendations to see what further assistance can be given over the remainder of the MCA-N programme. He particularly thanked MET, MAWF and MTI for their high level of representation at the workshop, and looks forward to continued constructive engagement with these ministries in the future.



## Annexes

### A Namibian Devil's Claw Workshop Programme

| DAY   | TIME          | TOPIC/S  |
|---|---------------|--|
| <b>DAY 1</b><br>5 Feb 2013                      | 08h30         | Registration of participants   |
|   | 09h00         | Official Welcome and opening of workshop   |
|   | 09h30         | Introduction to the workshop   |
|   | 10h00 – 10h30 | <b>TEA &amp; COFFEE BREAK</b>  |
|   | 10h30 – 13h00 | Presentations from PPOs on Devil's Claw management & monitoring <ul style="list-style-type: none"> <li>• Kyaramacan Association – Devil's Claw management plan/s</li> <li>• Balyerwa – Management decisions</li> <li>• Nyae Nyae + N#a Jaqna – Monitoring (including post-harvest impact assessment) and Internal arrangements, buying points &amp; traceability</li> <li>• Vergenoeg – Livelihoods and long-term harvesting from same resource</li> </ul> |
|   | 13h00 – 14h00 | <b>LUNCH</b>   |
|   | 14h00 – 15h00 | Presentation on status of Devil's Claw in Zambia   |
|   | 15h00 – 15h30 | <b>TEA &amp; COFFEE BREAK</b>  |
|   | 15h30 – 16h30 | Presentation on status of Devil's Claw in Angola   |
|   | 16h30 – 17h00 | Discussion and way forward – <b>END OF DAY 1</b>   |
| <b>Namibian Devil's Claw Workshop continued</b> |               |  |
| <b>DAY 2</b><br>6 Feb 2013                      | 08h30 – 10h30 | Devil's Claw Policy refresher training for MET & others ( <i>Consultant</i> )  |
|   | 10h00 – 10h30 | <b>TEA &amp; COFFEE BREAK</b>  |
|   | 10h30 – 13h00 | Devil's Claw Policy refresher training for MET & others ( <i>Consultant</i> )  |
|   | 13h00 – 14h00 | <b>LUNCH</b>   |
|   | 14h00 – 15h00 | Presentation on MET trade statistics and permits ( <i>Wilma Moller MET</i> )   |

*Namibian Devil's Claw Workshop (5 – 7 February 2013)*

|                                   |                      |   |
|-----------------------------------|----------------------|---|
|                                   | <b>15h00 – 15h30</b> | <b>TEA &amp; COFFEE BREAK</b>   |
|                                   | 15h30 -17h00         | Discussion and way forward – <b>END OF DAY 2</b>  |
| <b>DAY 3</b><br><b>7 Feb 2013</b> | 08h30 – 10h00        | Presentation of “Competitive Assessment and Market Entry Study of Devil’s Claw in the US” ( <b>TAMU</b> ) |
|                                   | 10h00 – 10h30        | <b>TEA &amp; COFFEE BREAK</b>   |
|                                   | 10h30 – 13h00        | Discussion and way forward & Workshop closure   |
|                                   | <b>13h00 – 14h00</b> | <b>LUNCH</b>  |
|                                   | 14h00                | Departure of workshop participants  |

## **B Attendance list**

| <b>Name</b>             | <b>Organisation</b>    | <b>Country</b> |
|-------------------------|------------------------|----------------|
| Akwenye, Penny          | MCA-N                  | Namibia        |
| Andreas, Taimi          | MET -Windhoek          | Namibia        |
| Arnold, Paulus          | MET -Tsumkwe           | Namibia        |
| Banda, August           | Vergenoey              | Namibia        |
| Brandt, Johann C.       | MET -Okahandja         | Namibia        |
| Buchane, J.K            | MET Gobabis            | Namibia        |
| Carr, Steve             | NBRI                   | Namibia        |
| Chedau, Thaddeus        | Kyaramacan Association | Namibia        |
| Ciqae, Tsaan            | MET -Tsumkwe           | Namibia        |
| Cole, Dave              | MCA-N                  | Namibia        |
| den Adel, Saskia        | CRIAA SADC             | Namibia        |
| Diekmann, Gero          | ECOSO                  | Namibia        |
| Faschina, Nadine        | BMCC                   | Namibia        |
| Feleke, Elizabeth       | MCC                    | Namibia        |
| Fennessy, Julian        | NRI                    | Namibia        |
| Gariseb, Phillipus      | Vergenoey              | Namibia        |
| Gomeb, Ismael           | ECOSO Dynamics         | Namibia        |
| Gruneweld, Thecha       | MET -Windhoek          | Namibia        |
| Hango, Hileni           | MET -Rehoboth          | Namibia        |
| Hatonda, Godfried Cocks | DC Trader              | Namibia        |
| Haus, Ulrike            | Harpago                | Namibia        |
| Hauwanga, Beatha        | MET -Okakarara         | Namibia        |
| Hoeses, T.B.            | MET- Outjo             | Namibia        |
| Hofmeyr, William        | Wordplay Namibia       | Namibia        |
| Honens, Meike           | NEOi                   | Namibia        |
| Horsthemke, Irmela      |                        | Namibia        |
| Ickua, Frieda           | MET -Gobabis           | Namibia        |
| Iijambo, Aini           | MET -Rehoboth          | Namibia        |
| Iitula, Niky            | MTI                    | Namibia        |

*Namibian Devil's Claw Workshop (5 – 7 February 2013)*

|                     |                        |          |
|---------------------|------------------------|----------|
| Johnson, Steve      | SAREP BOTSWANA         | Botswana |
| Kaqece, N!aici      | Nyae Nyae conservancy  | Namibia  |
| Kambinda, Isak      | MET Grootfontein       | Namibia  |
| Kangumine, Erna     | DC Trader              | Namibia  |
| Kapembe, Festus     | MCA-N                  | Namibia  |
| Katjimune, U.T.     | MET -Outjo             | Namibia  |
| Kaumba, J.          | MET Oshana             | Namibia  |
| Kazonganga, Billy   | MET                    | Namibia  |
| Khwarae, Geof       | SAREP BOTSWANA         | Botswana |
| Kleopas, Ester      | N#a Jagna Conservancy  | Namibia  |
| Kolbooi , J.J.      | MET -Tsumkwe           | Namibia  |
| Krafft, Micheal     | Farm Ibenstein         | Namibia  |
| Lifatila, C.S.      | MET -Katima Mulilo     | Namibia  |
| Lipange, Joseph     | MET -Rundu             | Namibia  |
| Ludwig, Barbara     | ECOSO                  | Namibia  |
| Malima, Ben         | MAWF                   | Namibia  |
| Mallet, M           | CRIAA SADC             | Namibia  |
| Manyando, Beauty    | Balyerwa Conservancy   | Namibia  |
| Matomola, M.C.      | MET Oshikoto           | Namibia  |
| Mbunga, Mukriste    | ECOSO                  | Namibia  |
| Moller, Wilma       | MET                    | Namibia  |
| Monyadzwe, Chandida | SAREP BOTSWANA         | Botswana |
| Motlhaping, Mbazo   | CRIAA SADC             | Namibia  |
| Mpofu, Fidelis      | NNF                    | Namibia  |
| Mubonda, Ngula      |                        | Zambia   |
| Mulongwe, Lishomwa  |                        | Zambia   |
| Murphy, Carol       |                        | Namibia  |
| Mushavanga, Johanna | Kyaramacan Association | Namibia  |
| Muzwalicaba, Pires  | Balyerwa Conservancy   | Namibia  |
| Mvula, Ellen        | MET -Rundu             | Namibia  |
| N!aici, /Aice       | Nyae Nyae conservancy  | Namibia  |

*Namibian Devil's Claw Workshop (5 – 7 February 2013)*

|                      |                       |         |
|----------------------|-----------------------|---------|
| Ndimunhu, Wilhelmina | MET -Okahandja        | Namibia |
| Neu, Daniela         | CRIAA SADC            | Namibia |
| Nott, Amber          | NEOi                  | Namibia |
| Nyirenda, Moses      | WWF Zambia            | Zambia  |
| Olavi , Simon        | N#a Jagna Conservancy | Namibia |
| Salin, Vicky         | Texas A&M University  | USA     |
| Samahiya, A.S.       | MET –Katima Mulilo    | Namibia |
| Shituleni, Victor    | MET-Otjiwarongo       | Namibia |
| Simon, Lazarus       | ECOSO Dynamics        | Namibia |
| Smith, Manjo         | NOA                   | Namibia |
| Tapiso, Keneth S.    | MET -Rundu            | Namibia |
| Uahengo, Loide       | MCA-N                 | Namibia |
| Uusiku, Salomon      | MAWF DEES             | Namibia |
| Uzera, Meriam        | DC Trader             | Namibia |
| Vararavi, Alu        | IRDNC                 | Namibia |
| Von Bach, Helmke     | MCA-N                 | Namibia |
| Washington, Elzadia  | USAID                 | Namibia |