



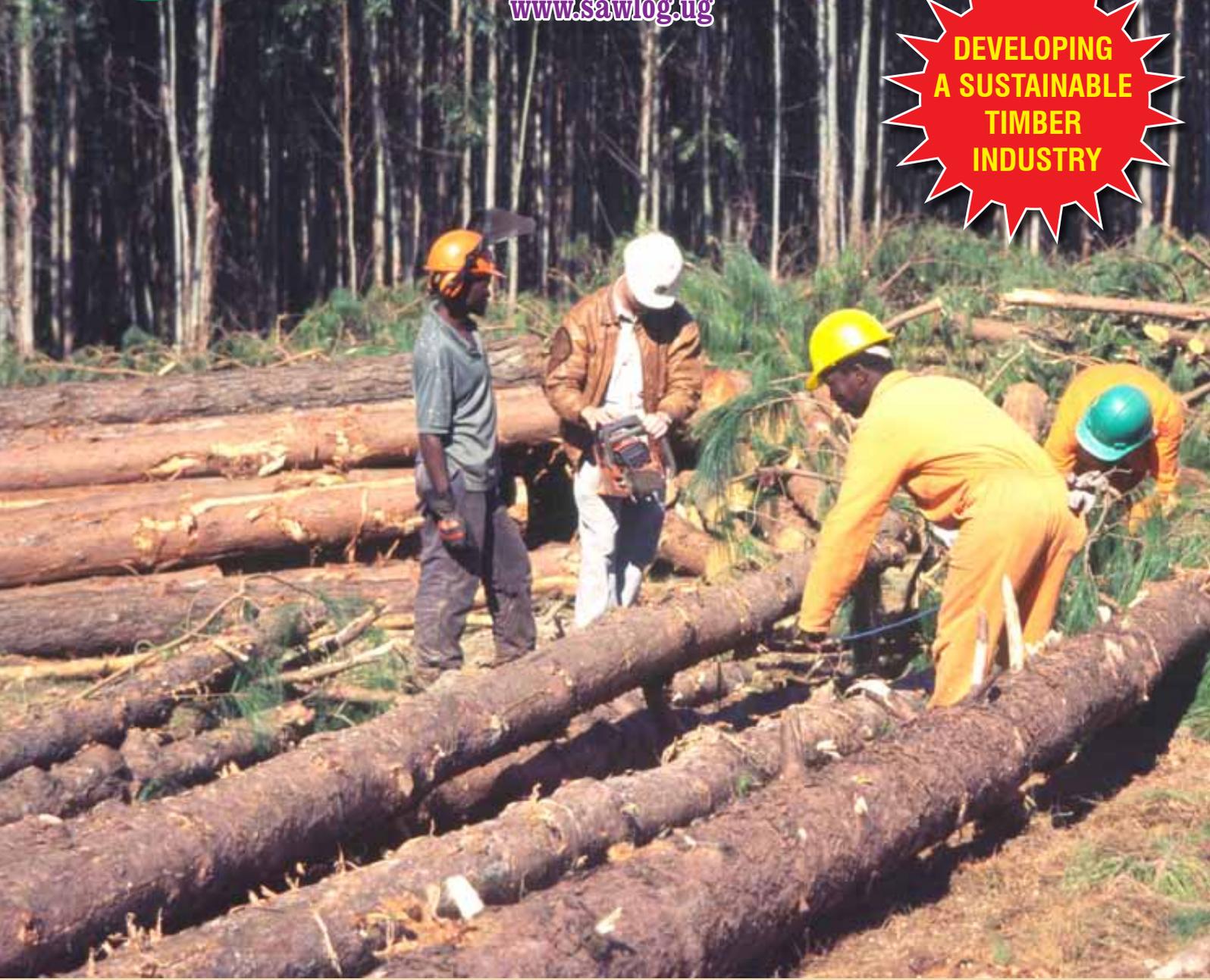
NEWS OF THE COMMERCIAL FORESTRY SECTOR IN UGANDA

SPGS: Supporting private tree growers since 2004

Issue No. 37 | October - December 2013

www.sawlog.ug

**DEVELOPING
A SUSTAINABLE
TIMBER
INDUSTRY**



The **Sawlog Production Grant Scheme (SPGS)** is a project of the Government of Uganda, funded by the European Union (EU), the Governments of Norway (GoN) and Uganda. Since 2004, over 37,000ha of timber plantations have been planted by many commercial and community growers throughout the country.
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Nursery & Seed Update

by Francis Ssali (Plantation Officer)

Nursery certification scheme:

Since 2010, SPGS has been carrying out certification of private commercial tree nurseries in a bid to promote production of quality tree seedlings and professionalism in the nursery business. To date, the number of certified nurseries is 49 but this is expected to increase at least by the end of the year. SPGS and UTGA staff are currently traversing the country carrying out audits for 2013/2014 nursery certification exercise. The category of nurseries being audited includes the already certified nurseries whose certificates expire this year, those that did not qualify for a certificate plus the new applicants. Some nurseries have not raised seedlings this season mainly because of the unpredictable weather in some regions which has forced people not to make any bookings and also some planters scaled down on planting because of uncertainty for further funding from SPGS. Some have not been in production, while others have suspended the business. For these nurseries to be included on the SPGS/UTGA list of certified nurseries for 2014, they will be visited when they have seedlings in the nursery, probably early next year. We have continuously received new applications for SPGS certification from private tree nursery owners. The final list of certified nurseries will be out as soon as the exercise is complete. Check our website www.sawlog.ug for updates.

There are other clonal nurseries coming up but have not started production and these will be audited as soon as production has started in those nurseries. Among the things that we look for during the clonal nursery audits is the use of improved material to produce clones, having a well designed mother garden, proper harvesting of cuttings, potting, proper tunneling and well managed growing-out sections.

A nursery brochure to help the public understand the whole process further is available at the SPGS offices.

Training: Between 8th -11th July, we run a seedling nursery management training course at Global Woods AG. nursery in



Francis Ssali during a nursery audit process. Certified nurseries are regularly visited and annually audited to ensure that standards are maintained.

Kiboga. The course was attended by 21 trainees. The major objective of the course was to improve the skills of nursery operators to establish and manage a commercial tree seedling nursery in order to produce quality tree seedlings. There was a good mix of participants e.g. those from forestry companies raising seedlings for their own planting and other small/medium size commercial tree nursery operators. Suman Okodel, the nursery manager of NARAEC Research and Consultant Group emerged as the best trainee and won himself a book prize courtesy of SPGS.

Because of the huge interest in clonal forestry, there are quite a number of nurseries that have started to raise Eucalyptus clones. As earlier communicated, we have scheduled another Clonal nursery training course between 2nd – 6th December in Mityana. Remember we only take 25 trainees and booking is on a first come first served basis, upon payment of the 150,000/= training fee.

Seed update:

UTGA has in stock 110kgs of PCH Brazil; (48.5 kgs of F1 at 1,750,000/= per kg and 61.5kg of F2 at 2,050,000/= per kg). Nursery operators who intend to raise seedlings for the March-May 2014 season, should be making their purchase by now, and those who had booked are encouraged to pay up the outstanding balance to avoid inconveniences.

Please contact UTGA staff on 0785-343564 or visit their premises on Plot 116 Bukoto Street, Kamwokya. Book and pay in time to avoid disappointment.

Teak seed: SPGS together with UTGA plans to acquire at least 100kg of Teak seed from Tanzania and Southern Sudan for the next planting season. Considering the technicalities involved in raising Teak seedlings, we shall identify a few nurseries in Northern Uganda (where Teak is currently doing well) and train them on how to raise this seed. Plans are also underway to import Teak clonal material for faster multiplication.

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THE SPGS JOURNEY; 2004 - 2013 ... & BEYOND



by Bueno Sande Dickens and Warren Rance

Uganda was at the brink of a disaster just nine years ago when in 2004 the plantations area of the country had dwindled to a meagre 3,500 ha. Having fore seen the looming timber crisis, and other associated negative impacts of a dwindling forest resource, the government of Uganda, and the European Union, through the Saw-Log Production Grant Scheme [SPGS phase I; 2004- 2009], supported the private sector to establish 10,000ha of commercial tree plantations. With the good results achieved in phase I of the project, the European Union was joined by the government of Norway to jointly fund Phase II of the project to plant an additional 30,000ha. The target to have a total of 40,000 ha (approved to SPGS standard) is achievable by year end, 2013. With the sustainable target of 150,000 hectares set for Uganda, today the country stands at (conservatively) between 60,000 to 70,000 hectares of plantations. This includes area planted by NEA and other private tree farmers outside of SPGS. This is a remarkable achievement in just 10 years. It is exciting to see how far we have come. The journey may not have been that smooth, but with support from our development partners; European Union, the Governments of Norway and Uganda, we are happy that we walked this journey.

The current phase of the project is officially scheduled to end in Dec 2013. We are however happy to note that the Government of Norway is considering adjusting funding to 2014, to bridge the funding gap. However, with funds from the Government of Norway only, the implication is that the available funds shall be slightly less than is required to run our usual operations at full scale as has been the case. The SPGS team is working very closely with development partners and Government to find funding interventions for 2014 and beyond.

Enough with worrying about the future!! Sometimes it is of value for one to

pause amidst the rush, be cognizant of the achievements, in order to gain strength and courage to move on. Yes, the project has been incredibly successful in stimulating and supporting a critical industry within the country. Although the industry is still young and growing, it is already having a profound impact on the country and it shall continue to contribute exponentially as the industry develops and comes of age.

We have briefly summarized the achievements to date in terms of hectares, let's take a moment to understand the immense impact these commercial plantations have had.

Growth of timber resource.

With an expected area of 40,000ha by end of 2013, SPGS prides in its contribution to building a timber resource for the country. SPGS has supported many small, medium and large scale tree farmers to establish commercial tree plantations. With the decentralised nature of the Ugandan forestry sector, there has equally been a level of "unexpected" planting of trees, in a commercial format. We see everywhere we go that people neighbouring commercial planters have established their own trees, following the example set. These plantations, sometimes only a few dozen trees, are often managed and maintained to very high standards. Small scale farmers have followed the lead and will reap the benefits of well managed plantations alongside the large scale planters.



Over the past 9 years, SPGS has supported the establishment of quality tree plantations, such as this Pine plantation in Busoga Forest Company in Mayuge

Benefits to the rural economy

Small business development has taken place in the rural areas with all sorts of forestry support enterprises being developed. Forestry support services such as seedlings nurseries, contracting services, tools and equipment suppliers, have automatically come up as a result of establishment of tree plantations. Rural incomes have been positively impacted by the industry, once again reducing urbanisation and providing long term employment opportunities for both the young and older generations. Any person can do forestry work and as such we see people of both genders becoming involved in the industry at all levels of the value chain. Forestry is slowly getting the local economy wheel to turn.

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FORECASTING A TIMBER “TSUNAMI”

by Warren Rance (SPGS Chief Technical Advisor)

At the recent SPGS Commercial Forestry seminar in Kampala, Mike Howard of Fractal Forest a consulting firm in RSA delivered an interesting presentation on processing and value addition. Prior to the seminar, Mike studied the data on SPGS clients, provided to him by the SPGS team. He then developed a basic model which highlights the expected future timber yields from the established plantations.

The data involved was, due to the lack of industry consolidated data, comprised of only SPGS approved areas. The total area of which is the expected 40,000ha to be approved by SPGS by year end. The accumulated annual established hectares are illustrated in Figure 1. The total plantation area in Uganda is roughly estimated between 67,000 and 75,000 hectares, so the figures and data presented here could potentially be twofold.

Area of Plantations established per year SPGS Approved

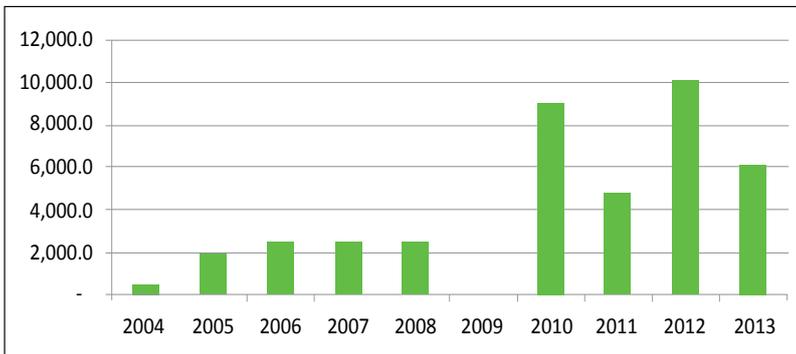


Figure 1. Area of SPGS approved plantations.

The focus of the industry has been largely on establishing plantations, much so that the country only has an estimated processing capacity of less than 30,000m³ per year. The sector according to Mike Howard needs to start working towards the establishment of additional processing capacity. The model was developed to illustrate the “Tsunami” of timber that will be produced by the industry during the next 20 years.

This was done by extrapolating the age class data and the application of the recommended thinning and harvest regimes to the data set. When incorporating the expected yields for each of the thinnings and the expected final harvest, a reasonably accurate prediction can be made. Over the next 10 years the yields from the plantations shall be primarily from 1st, 2nd and 3rd thinnings and gradually increase to 175,000m³ by 2017. When final harvesting commences, the volumes produced shall increase dramatically from 2022. Figure 2 shows the expected yields increasing over the next 10 years.

Projected Volume 2009 - 2022 SPGS Approved Plantations

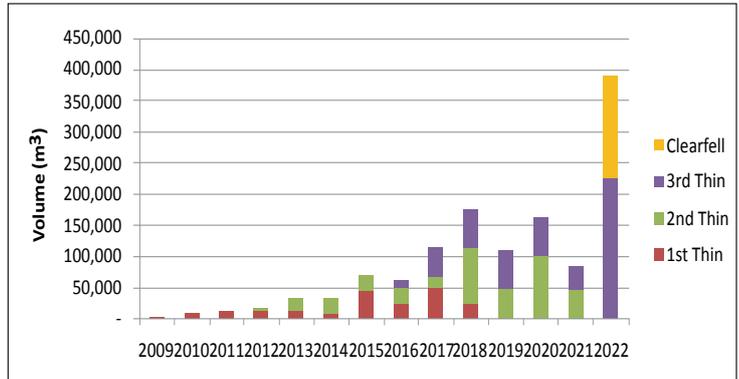


Figure 2. Projected volumes 2009 – 2022 from SPGS approved plantations

The decentralised nature of the plantations across Uganda and the high cost of transport will likely require that processing facilities are also decentralised. This translates to a number of sawmills that shall be required by the sector to ensure that the timber produced is efficiently utilised. The projected yields will require that Uganda doubles its capacity in two years, increase capacity six-fold in five years and require 13 times the current capacity by 2022.

The “Tsunami” that Mike referred to in his presentation actually refers not to the timber produced in the next ten years but to the timber that these plantations will yield thereafter.

Figure 3 below shows yields from the plantations between 2020 and 2030.

The Tsunami of timber starts with a warning in 2023 but peaks with over 3,000,000m³ in 2030 requiring 100 times the current processing capacity in Uganda to have been developed. It is of course the forest owner's responsibility to regulate the harvest by reducing the peaks and troughs of the varied age classes. By bringing some harvests forward and delaying others, the yields will be “regulated” at approximately 700,000m³ per annum. Considering that this data represents approximately half of the plantation area, the current Ugandan

Projected Volumes SPGS Approved

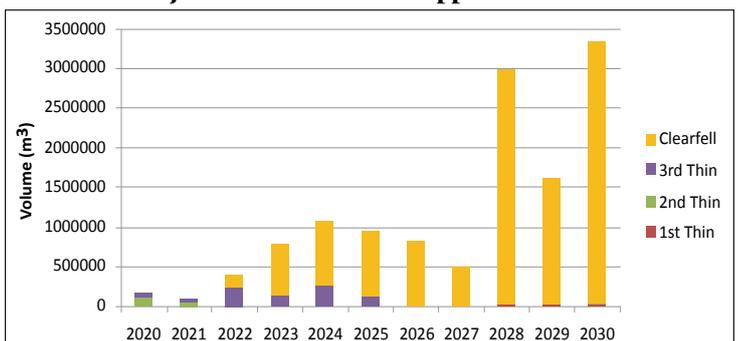


Figure 3. Projected Volumes SPGS Approved

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forests should produce a regulated yield of between 1 and 1.4 million cubic metres of round logs per annum if managed sustainably.

The Government of Uganda and development partners; the Government of Norway and the European Union have through SPGS and alongside dedicated tree growers successfully established a significant resource for the country. Although the sector is not yet there, if managed correctly, it has the potential to contribute significantly towards the Ugandan Gross domestic Product (GDP) and reduce its dependence on imported timber and timber from natural forests.

Figure 4 shows the steady increase of pine timber on the Ugandan market.

Uganda is positioned to learn from the experience of other more developed forest sectors and consciously work towards the development of efficient primary and secondary processing industries. This should be regarded as a priority in the sector. Through modern processing of the round logs from the plantations, the value generated by the industry towards the GDP will be significant. At a relatively low recovery of 40%, an annual sustained harvest of the estimated plantations in Uganda would generate between US\$130 – US\$160 million per annum. This is on the assumption that the harvesting is regulated at 1 -1.4 million m³ per year.

The implications of these volumes for the Ugandan forestry sector

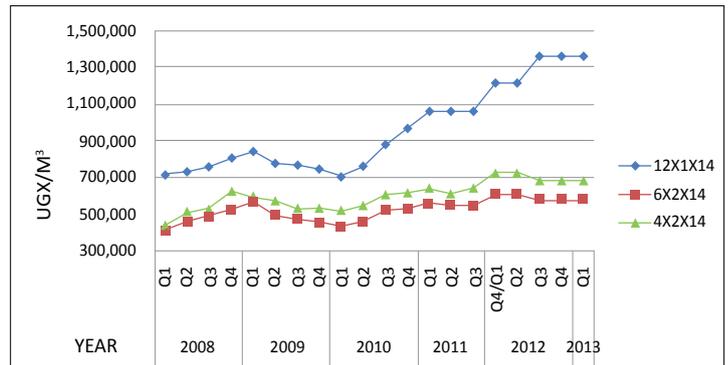


Figure 4. Market trend - pine sawtimber

as well as for the regional timber markets are far reaching. These volumes require that planning of processing facilities should already be in process. Delayed implementation of processing facilities shall result in delayed or wasted thinnings and loss of revenue for all involved. The decentralised nature of the Ugandan plantations and establishing efficient large scale processing facilities to serve these areas is going to be a challenging task, but there is no short cut to this. It has to be done, if we are to realise, a profitable and sustainable commercial forestry industry.

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THE SPGS JOURNEY

The national economy

We hope to contribute to the national economy through reducing imports of raw materials, positively impacting the balance of trade and the local economy. We have seen a decline in importation of poles for amongst others the rural electrification project and timber for construction.

Climate change mitigation

We are positively impacting the environment, establishing trees which act as carbon sinks and reduce the negative impacts of deforestation. Supplying wood products from plantations will reduce the dependence on the natural forests. Commercial growers are producing charcoal at an industrial scale which again contributes to the mitigation of climate change.

A beautiful Uganda, once again

As we see the forests grow we can all witness Uganda becoming greener again. The recreational potential is just fantastic. Just a few minutes out of Kampala, one could take a walk in a

cool forest, and those who want to stay a while could spend the weekend. I re-echo minister Kamuntus call to “plant trees for any and all occasions” and contribute to making Uganda green again.

The Government of Uganda, the development partners and not forgetting the tree growers, and the very professional and dedicated staff of SPGS, should be applauded for their investment into making Uganda a better place for all of us.

Future plans and beyond 2013.

With our newly opened regional office in Gulu, we hope to be able to push forward our agenda on Northern Uganda with more direct technical support and training activities. Our restructured and strengthened team have increased capacity to undertake the client field visits, training and technical support that have made our project successful.

The recent annual seminaar was a definite milestone and there is definitely an air of urgency now in the sector. An urgency to attend to governance and policy challenges, an urgency to attend

to marketing and market development, an urgency to collaborate with other players in the sector and an urgency to implement effective and efficient processing and value addition solutions.

It is encouraging to see how people are contributing to their organisations and to see the strength developing in Uganda Timber Growers Association (UTGA). This organisation is already contributing significantly towards the development of the sector, for the people by the people.

Beyond 2013, the Government of Norway (GoN) has indicated willingness to support SPGS for 2014 when the EU funding will not be available. SPGS is currently drawing up the plan for 2014 and the plan focuses on the following: -

- Continued technical support to existing clients and communities.
- Facilitate staff development to undertake the evolving role and changing landscapes; and
- Dedicate quality time to supporting the preparation for the potential 3rd phase of the project.

Thanking you all for your continued support.



TIMBER STANDARDS IN UGANDA

by Henry Ahimbisibwe (SPGS Plantation Officer)

The Forestry in Uganda has experienced significant growth over the last decade largely due to sustained effort and support by government and development partners in funding private sector to invest in commercial forestry. Furthermore the ever increasing demand for tree products particularly timber has attracted a significant number of people to invest in commercial forestry. As a result, there are currently more private individuals and institutions engaged in this business than ever before. For instance with support from SPGS alone, over 37,000 ha of quality forest plantations have been established since 2004. These plantations are thus anticipated to provide tree products including timber, poles and firewood and narrow down the current timber deficit.

Why timber standards?

Whereas future prospects for commercial forestry in Uganda are bright, limited compliance to existing and or lack of appropriate wood/timber standards is likely to compromise the anticipated gains. The Uganda National Bureau of Standards (UNBS) defines standards as requirements, specifications, guidelines or characteristics that can be used consistently to ensure that materials, products, processes and services are fit for their intended purpose. Timber standards therefore ensure that the ability of timber products to fulfill customers' needs and expectations is consistently maintained. Standards help improve competitiveness of timber products and consequently inspire confidence in both producers and users of timber products. Standards also ensure optimum and efficient use of sawn wood. Timber standards are therefore a critical ingredient for a vibrant and successful future commercial forestry industry.

Current timber related Standards

According to UNBS, Uganda currently has 37 wood and timber related standards. It is however important to note that most of these standards are largely unknown in the public domain. It is thus not

surprising that majority of people engaged in timber trade in Uganda actually think that there are no timber standards. The low levels of public awareness on timber standards is partly attributed to limited sensitization about existing standards and the fact that the language used is too technical to be understood by timber producers, processors, traders, and end-users. Ideally timber standards like any other standard should be developed on the basis of demand from the public who use them. The fact that most of the existing timber related standards were adopted from International Standards Organization (ISO) and East African Standards, meant that local public participation in their formulation was limited and hence the low awareness.

According to Geoffrey Odokonyero, a saw mill manager with NEA, none of the 37 existing wood and timber related standards specifically covers timber grading and classification of sawn timber, which is of interest to most people in Uganda. The current timber standards mainly cover timber preservation and testing processes, poles for power and telecommunication lines and plywood. When contacted on this issue, UNBS indicated that they are currently working together with stakeholders in the timber industry (private sector, training institutions and government agencies) under the UNBS/TC12-Furniture technical committee to develop new timber standards for sawn softwood timber. Currently there are 15 timber related standards in draft form awaiting finalization by UNBS.



Individual pieces of wood differ in quality and appearance with respect to knots slope of grain, and other natural characteristics. This means they vary considerably in strength, utility and value, and should therefore have different grades and standards.

Challenges to implementation of timber standards.

Among the challenges constraining the enforcement and development of timber standards is the fact that statutory bodies such as UNBS, Forestry Sector Support Department (FSSD) and NEA charged with formulating and enforcing timber standards are constrained by inadequate resources in personnel, funding, appropriate technologies, logistics and appropriate legal instruments to fight sub-standard timber products. Additionally, the banning of timber export by Government in 1992 and the subsequent repealing of timber export and Grading Rules, 1967 (Cap. 247) by the National Forestry and Tree Planting Act, 2003 substantially weakened regulation of timber trade. The 1967 act (Cap. 247) provided for appointment of timber inspectors and graders by the then head of Forest Department. The inspectors had wide-ranging powers to inspect and confiscate all timber not certified by registered timber graders. The coming in force of the National Forestry and Tree Planting Act, 2003 thus rendered these timber inspectors and graders redundant.

Way forward

❖ As a way forward, UNBS together with other relevant government agencies and stakeholders in the forestry sector should undertake to sensitize the general public about existing timber related standards.

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PROSPECTS FOR TEAK PLANTATIONS IN UGANDA. SPGS Team Spends Time At Kilombero Valley Teak Company [Kvtc], In Tanzania Learning About Teak.



by Nelly Grace Bedijo and Ssali Francis (SPGS)



SPGS' Walter and KVTC's Peter Nkwabi sharing ideas on Teak site selection process.

In August 2013, a team of four SPGS staff went on a safari to the Miombo woodlands of Tanzania Ifakara (Morogoro District) at Kilombero Valley Teak Company (KVTC). This safari was arranged for staff to get a good exposure to *Tectona grandis* (commonly known as Teak) - a tree species that SPGS hopes to promote more in the Northern & Eastern regions of Uganda, where there is some evidence that this species performs well.

In India wood is Teak and Teak is wood.

KVTC's Teak resources measure up to 8000 ha. The oldest stands were about 22 years, and with their Mean Annual Increments (MAI) and Current Annual Increments (CAI) values, clear-felling at KVTC is planned at 23 years on the best sites. Thinning of the older compartments was ongoing at the time of visit and the extracted logs were being processed. This makes KVTC an excellent place for learning Teak business given

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The standards should also be interpreted, simplified and translated into local languages that can easily be understood by the majority of timber producers, processors, traders and end-users.

- ❖ UNBS, in consultation with all major players in the commercial forestry sector should develop a road map for popularizing existing timber standards as well as developing new ones.

- ❖ There is a need to increase public involvement in the process of developing timber standards. Since the formulation of new standards is demand driven, the public particularly the private sector can assist UNBS to identify areas, processes and timber products that need standardization. Interested individuals and institutions can also apply to join the Furniture Technical Committee (UNBS/TC12) which is charged with developing new timber standards.

that there is an opportunity to learn right from the seedling stage (tree nursery practices) to the planks (sawmill).

On our first day, we had a quick introduction to the company's operations and policies. It was then that we realized that KVTC operations follow strict economic, social, environmental and health and safety policies. They are currently seeking controlled wood certification to demonstrate their high standards. The company can be considered a model Teak company and could also be regarded as a conservation company with more than 20,000 hectares of protected and managed natural Miombo woodland.

The current market for KVTC's timber is India which holds 70% of the world's teak trade. 99% of the imported teak to India is consumed within the country. In India wood is Teak and Teak is wood. Other major markets for Teak in the world are Vietnam and China. However, in the Teak market, supplies of the much preferred natural

Teak is reducing and this has resulted in an increased demand for plantation grown teak.

During our stay at KVTC, we got involved in almost all the operations. Thanks to Mr Hans Lemm, (KVTC General Manager) and his team who were very welcoming and shared with us their experiences.

At the Sawmill: Teak is a highly valuable species and one of few plantation species that justifies long transportation. Even the smallest piece can be sold, which is seldom the case with other species. KVTC's sawmill is a very efficient mill. It processes smaller diameter logs (11 cm) of shorter lengths 1.6m. The mills have a very high feed speed, and the production is very high with an annual production capacity of approximately 40,000m³ per annum on a single shift basis.

There are three main focal points in sawmilling i.e. the volume through put, recovery, and value (grade outrun). At KVTC, logs are graded according to log sizes in the log yard and measured to quantify the volume fed into the mill. Also this is very important given that each log class has a different sawing pattern. Recovery is optimized. KVTC has a dry mill where the smaller pieces of timber recovered from the slabs are engineered through finger jointing and or lamination to produce

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larger boards as required by the markets. In commercial forestry, the profits come from maximising utilisation and one has to find a way of utilizing it efficiently. The mill uses the bark and offcuts in their kilns to season the timber. Timber products are market tailored and so varying timber sizes of very high quality wood are produced. The Teak market pays a premium for high value teak products (clean timber without the pith showing on the surface).

We got the real picture of Teak plantations and performance of Teak on different sites. One very clear lesson to us was, **Teak is very site specific**. Even in the same area, with the slightest variation in the soil, there can be significant variation in the performance of the trees. Site selection for Teak is a key activity and should be done with great accuracy. At KVTC, the best performance was on sites that have deep fertile well drained soils, with rainfall of at least 1500mm. **Soils, Vegetation cover, and plant species** are good indicators of Teak sites. Good soils for Teak should be at least 1M deep, well drained, having no stones/gravel, no hard pans and a low water table. Also Teak performs extremely well in areas that were previously heavily vegetated either to grasses or trees. Less fertile areas (bare soils), wetlands or sparsely vegetated sites are a no go area for Teak. Here in Uganda, some of the degraded natural forests may be good potential sites for Teak plantations.

Teak Nursery: KVTC raises both stumps and seedlings in their nurseries. The general observation over the years has been that the stumps are robust and can be planted in the fields with minimal rains and will survive. Seedlings, however, require ample rains to establish. Here in Uganda, stumps should be planted out directly in the fields. The optimum size of stumps for planting is 7 inches i.e. 3 inches shoot system and 4 inches root system. KVTC is moving towards clonal teak. The company aims at planting 70% of the clonal material by 2014 and by 2015 they will be planting 100% clonal material. As we observed in the field, in the clonal stand, there was greater uniformity and straightness compared to the seed stands.

Silviculture: In the field, Teak requires frequent **weeding**: Teak does not like any competition in the early stages of its growth and therefore, 100% weeding should be the practice to realize full potential of the crop. The advantage with Teak is that after canopy closure, there is almost no undergrowth.

Pruning is however, a rigorous activity in Teak. The company practices variable height pruning to limit the knotty core to 10 cm diameter. Pruning should be done timely to prevent the branches from developing into very big branches, which makes the operation difficult and expensive. Teak has the ability to coppice and therefore after every pruning operation or a mild fire, epicormic branches develop. The company does what they call a hand pruning where the epicormic shoots are removed at the bud stage to prevent them from developing into real branches. The hand pruning operation is a very easy operation and the productivity is high. One person can hand prune a hectare in a day. **Thinning** is done in three cycles leaving a total of 250 SPH for final felling. The objective of thinning is

Currently KVTC has embarked on research and is selecting superior genes for multiplication through cloning.

to maximize diameter growth on selected trees. However with Teak, the real product is the heartwood and so, KVTC thinning regimes are being adjusted to promote heartwood development at the early stages of growth.

KVTC also practices **coppice management** as an establishment method. However, this practice is currently limited to the poorer sites, which are difficult to establish using seedlings or stumps. Coppicing is also limited to areas where no improved planting material is available and when sites have adequate surviving stems.

Fire Management. We visited stands that were affected by fire. The lesson here was **Teak is resistant to fire but not fire proof**; Teak has a thick bark but a hot fire will damage the inner growing cambium layer. A lot of measures were in place to eliminate forest fires. Understory “controlled” burning is done ahead of the fires season to reduce the fuel load in the forest. Teak is a deciduous plant, so a lot of fuel accumulates within the plantation in the dry season. The company includes the surrounding communities who are involved in forest fire protection measures, e.g. in creating fire lines around the compartment boundaries. KVTC also run a community out grower scheme, where free seedlings are given to the communities to plant. The company also finances community development projects.

Research and development: We observed a number of defects in the field, which can be eliminated by breeding and multiplying superior genes. Some of the defects we saw included; *fluting*, where the butt end gets indented, *buttressing*; where the log is wider at the base, *spiraling*; where there is a twist in the timber, and *sweep and taper*. Currently the company has embarked on research and is selecting superior genes for multiplication through cloning. Also seed collection from the superior trees is being done for better seed quality. We hope that in the near future; they will be supplying to us some improved Teak planting material.

With the new skills and knowledge gained from KVTC, SPGS plans to improve on Teak practices and promote professional operations. For the very start, a practical handbook on Teak silviculture guidelines will be published. Also, field based training courses shall be run on teak plantation operations and nursery practices. Already there are some teak stands in the country which will be assessed to come up with Teak site requirements applicable in Uganda to avoid costly mistakes. SPGS & UTGA will avail improved teak planting material to the nurseries. The project also plans to establish trial sites for Teak in some part of Uganda and accurately map out potential Teak growing areas in Uganda.

A big thanks to the KVTC team for your hospitality. Our special thanks to: Hans Lemm- General Manager, Leon Viljoen- Chief Forest manager, Francois- Sawmill manager, Mark-Planning manager; Hamidu- Harvesting manager, Gerald- Senior Forest officer, Kessy –Plantation Manager Nakafulu, Hali Maganga-plantation manager-Ichima, Peter Nkwabi- Site Selection Specialist, Athuman Mbamba – Plantation Manager Mafinji.

We learnt a lot from you and we hope that someday, you will visit us in Uganda to see if we are preaching what we learnt. Asante!!

SPGS Clients Meeting & Field Safari



by Charles Odeke (SPGS Plantation Development Manager)

Under the theme, “**Forest Utilization and Wood processing**”, the SPGS clients meeting and field safari, 30th-31st May and 6th-7th June 2013, was the first of its kind, aimed at highlighting the need and trigger ideas of how the industry can make a transition from the current phase of establishing trees, to the next level of looking at processing, markets and value addition. As we may know, trees planted in phase I of the project are now being thinned, and the eminent challenges now are; appropriate technology in processing thinnings and market for thinnings. It is in response to this current need that SPGS consulted with other stake holders in the sector to chart a way forward. With partnership from NaFORRI and NFA, who provided equipment and technical support, SPGS was able to successfully organize a field safari for clients to NaFFORI offices in Mukono. During the field safari, there was a demonstration of the available technologies of processing and utilizing small diameter logs. It was not only about timber. Clients also had an opportunity to visit a pole treatment plant at Ferdsult Engineering Services in Lugazi. Through the field day, below are the operations demonstrated.

Log making and use of sulky for extraction

The process starts with preparation of the log in such a way that recovery is maximized. This is called log making. A number of logs were cut to short logs (*those which are bent*) with a chainsaw prior to being milled. The operation is aimed maximizing recovery from deformed logs, and also to ease handling. Once logs have been made, the next demonstration was the use of a sulky to extract them from the log yard to the mill. Clients were amazed at how a sulky simplified log extraction. Using a sulky, one person would extract logs that would otherwise require 6 people to do the same work. Clients appreciated the cost effectiveness of using this equipment.

Sawmilling and timber handling

The Wood miser [Band saw] and the Kara [Circular saw], were used to demonstrate techniques of milling small diameter sawlogs. Various cutting patterns were demonstrated including that of separating juvenile wood from grade wood through a technique called boxing out the heart. Several logs were cut into timber of various shapes and sizes at this stage. A Comparison between the working of the two mills was made. Clients were able to appreciate the fact that, because of the thin blade, the wood miser was a preferred saw for milling small diameter logs, compared to a kara saw which had a thicker blade. We also learnt that the



Godfrey Odokonyero, a sawmill expert at NFA, explains to clients the importance of measuring log length and its overall quality, before considering it for milling.

wood miser was more suited to mill hardwoods, while the kara saw was more suited to mill soft woods...but of bigger diameter.

Timber handling

Clients were shown how timber is seasoned (dried) to maintain its quality through proper stacking and application of anti blue stain fungi on wet pine wood. Clients observed that well seasoned timber preserves its quality and it also fetches higher premium on the market.

Value addition techniques

Clients also appreciated the concept of value addition techniques by observing how small offcuts are utilized. This included lengthening and thickening of small pieces of timber to make longer and thicker boards, respectively. Gilbert Omusana explained to the clients the different methods of lengthening and thickening timber (e.g. finger joints, dove tail joints) using glue and clumps. Clients were able to see various products made out of jointed timber such as key holders and beds. In the ordinary timber market, buyers inclined to the idea of standard lengths like the common 14 ft, yet through lengthening and thickening, timber, smaller pieces from thinnings could still be utilized.

Value addition in Eucalyptus was also demonstrated at Ferdsult Engineering Services pole treatment plant in Lugazi. Here, electricity transmission and fencing poles are treated. Clients were shown how poles are sourced, graded, seasoned and treated before they are sold. Clients noted that it was important to grow trees well knowing the market requirements. Issues to deal with pruning and thinning were proved important in determining a good log acceptable at the plant.

Cont'd on p.12



Proceedings of the 5th SPGS Annual Seminar - 20th August 2013

by Nelly Grace Bedijo (Senior Plantation Officer)

The SPGS 5th Commercial Forestry seminar was held at the Sheraton hotel, Kampala on 20th August 2013, under the theme **“Wood processing, Value addition and marketing”**. The seminar was officially opened by Mr. Paul Mafabi, Director Environment Affairs, in the Ministry of Water and Environment [MWE], acting on behalf of the Permanent secretary, Prof. Ephraim Kamuntu, the Honorable Minister of Water and Environment graced the event and officially closed the seminar. Attendance exceeded our expectation, with 191 participants. The event was testimony as to how strong and popular the commercial forestry industry has become. Support from development partners, the European Union and Governments of Norway and Uganda, to the Sawlog Production Grant Scheme and the forestry industry as a whole has been very fundamental in changing the face of the commercial forestry industry in Uganda. Below is a summary of proceedings from the event.

Message from development partners.

Mr. Bogdan Stephanescus, representing the European Union delegation said that from a development and climate change mitigation point of view, the European Union was committed to further support the commercial forestry industry in Uganda. He re-affirmed EU's willingness to fund another phase of the project [SPGS Phase III], pending a value chain study and successful implementation of the current phase.

Ms. Mary Mabweijano, representing the Government of Norway talked about, how the Royal Norwegian Government has been closely supporting forestry in Uganda for nearly 60 years through education. Ms. Mabweijano also re-echoed the message from EU, also saying that the Government of Norway remains committed to supporting commercial forestry in Uganda through the SPGS model to enrich the livelihoods of Ugandans, conserve the environment

challenges in timber trade from a forest company perspective. From his presentation, we learnt that we indeed have challenges in transforming the informal markets to the required commercial and professional market needed by the industry. In his presentation, his recommendation was that the government should lift the ban on timber exports to allow commercial companies to trade whilst the local markets need to be further developed and formalized.



Delegates at the commercial forestry seminar, keenly listening to the proceedings.

Mr Ponsiano Besesa also presented on the challenges in timber trade in Uganda from a timber traders' viewpoint. He emphasised the need for formalization of the market, strengthening of governance, standards development and regulation.

Session on market development:

This session had many interesting insights. Tina Achilla, a client of SPGS, shared her experience of the lessons learnt from her study tour to South Africa. Tina was part

and mitigate climate change.

Summary of presentations.

A total of 11 presentations were made, addressing different aspects of the industry. Mr Steven Nsita's presentation set the scene by giving a brief history of the commercial forestry sector in Uganda; *“where we have come from, where we are, and where we aspire to be”*. We learnt that the industry has really come along way, with a lot of challenges. However, he also noted that there has been substantial growth of the industry for the last few years, which he attributed to support from government and development partners, through SPGS to support the private sector to establish commercial tree plantations.

Mr Isaac Kapalaga; the General Manager Green Resources As, presented the

of the team of 13 SPGS clients who went for a 14 days study tour to South Africa. She noted that the quality of plantations in Uganda has significantly improved over the past 9 years. She however pointed out that from what she had learnt and experienced during the study tour, we still have a lot more work to do, if we are to realise a future profitable and sustainable forestry industry. We need to focus on the development of a service industry, pay attention to reducing waste and maximising utilization. She highlighted the need for investors to support forestry contractors, to help them develop into professional forestry contracting service providers. The key lesson was; consistent focus on quality throughout the value chain. Ms. Achilla also commented on the remarkable performance of associations and co-operatives and how groups of investors

cont'd on p.11

have been able to secure their future in the South African landscape due to this co-operation and co-ordination.

Ms. Hope Waira from The Ugandan Investment Authority (UIA) informed participants of services provided by the UIA and the benefits it could offer forestry investors. She urged investors to register with UIA and acquire investment licenses, because it is the only way that forestry investors could qualify for a range of available investment incentives. The UIA has now become a “one stop shop” providing all necessary support to facilitate investment. This includes URA representation and advice on tax issues and business registration assistance.

The Uganda National Bureau of Standards through Mr Richard Ebong shared with us on the development of timber standards in the industry. He reiterated the need for consultation and inclusion of the industry in the development of these standards. It was interesting to hear that the Uganda Timber Growers Association was already well represented in the standards development process.

The presentation from the guest speaker, Mr. Mike Howard, dubbed “the timber Tsunami” was an eye opener as to how much timber resource we have accumulated, and how prepared we are to deal with this resource, all expected to mature at about the same time. He made us aware of the growth of the timber resource and the urgent need for the industry to find a sustainable strategy for the development of processing and value addition in the country. It became clear that the value associated with forestry and the existing resource was significant and that the future contribution to the country’s Gross Domestic Product was worthy of attention by policy makers in the sector. He made a positive observation on the market trends and values of plantations.

The role of stakeholders in sector development, This session highlighted the need for all industry stakeholders to play their respective roles in ensuring a sustainable and profitable industry.

Mr. Peter Kiwuso of NaFFORI underlined the critical role that played by research to achieve long term sustainable forestry

development. NaFFORI is mandated to conduct and lead research in;

- ♦ Conservation of natural forests
- ♦ Sustainable management of plantation forests
- ♦ Growing and managing trees on farm
- ♦ Developing and promoting tree products and services
- ♦ Integrated Pest, diseases and Fire management
- ♦ Recreation, urban forestry and landscaping

NaFFORI recognises the need for trans-disciplinary and multi stakeholder participation to ensure relevance and effectiveness of research objectives.

Mr. Sande Dickens, Project Manager of SPGS, defined SPGS’s role in the future development of the industry. He showed us how through good sector co-operation, the industry has seen a turnaround in a relatively short period of time. He explained that there are many possible future developments and formats that could be implemented and that SPGS together with the development partners and the Government of Uganda are working tirelessly in this regard.

Mr. Dennis Kavuma of Uganda Timber Growers Association, highlighted the role of co-operatives in industry development. He emphasised that through collective intervention, the industry could for themselves secure a sustainable and profitable future. Through a co-operative base, individual transaction costs could be reduced and effective service delivered to the industry.

Mr. Robert Bariho, through his presentation on the “stakeholders’ role in developing the industry”, pointed out that it is the responsibility of each stakeholder to be proactive towards future development. The industry “belongs to us” and that we should not wait for someone else to solve our problems. He called on all stakeholders including the Government of Uganda to create an environment of good business, one that promotes and rewards good investment.

SPGS Awards; The seminar was an opportunity for SPGS to recognize and award best performing clients for the year 2013, and other outstanding personalities who have offered support

to the sector in one way or another. The presentation of SPGS awards was done by Charles Odeke, SPGS Plantation Development Manager. SPGS awarded the best planters in the 6 major cluster regions of SPGS beneficiaries. The results of best growers per cluster were as below.



- a) Mubende Cluster - Dr. Godfrey Bahigwa & Prossy Tumushabe.
- b) Victoria cluster - Isaac Kapalaga (Mukono & Masaka)
- c) Northern Cluster – There was a tie in this cluster and two people got the award, Gulu Timber Co. Ltd and Jane Langoya
- d) Central cluster - Jonathan Sekikongo in Nakasongola
- e) South Western Uganda - Ninsiima Evelyne in Kabale
- f) Albertine Cluster - Dr. & Mrs Zaramba in Kiboga
- g) Best Female grower - Aida May Kwesiga in Nakaseke
- h) Best Community - Muzira Co-operative – over 60ha planted in Bushenyi
- i) Best Contractor - Kwabakya Forestry Enterprises
- j) Best Nursery - Tree Growers in Kiboga

The award to the Most Resourceful Personality to the sector went to - Israel Kikangi, former Director Plantations National Forestry Authority. Israel retired from active service at NEA early this year.

Special award

In an unprecedented show of appreciation, the commercial tree growers of Uganda represented by Ms.Katarwa Beatrice, and Dr. Nathan Ndyanabangi, presented to the development partners, the European Union, Governments of Norway, and Uganda, a plaque is a sign of appreciation for supporting commercial tree farming. This award was presented on behalf of commercial tree growers in Uganda.

Concluding remarks and closure

Mr. Paul Mafabi, the Director, Environmental Affairs (MWE), summarized the proceedings stating that the SPGS Seminar was a special kind that brought together brilliant and excellent personalities. He indicated that forestry is



The SPGS Annual Seminar

an important component of the National Development Plan and the sector has evolved due to the effort of all involved, to be able to contribute positively towards the plan. He noted that the sector still faces many challenges which amongst others include;

- Informal and immature markets
- Illegal timber flooding the market
- Unclear standards
- Inadequate access to funding
- Shortage of professional skills and facilities in wood processing.
- Lack of fast growing tree species for charcoal and firewood production, and
- The future of SPGS is unknown to its stakeholders

He pointed out some interventions that may improve the sector. These included;

- Organisation of the sector in collective units such as UTGA
- Upholding of good governance, policies and procedures
- UNBS should standardize timber trade in Uganda
- Securing long term funding for the sector by operating the National Tree Fund
- Support the continuation of SPGS in the 3rd phase and beyond.

The Seminar was formally closed by

Hon. Ephraim Kamuntu – Minister of Water and Environment. The minister noted that the SPGS seminar was another milestone in the development of the industry and that the seminar was attended by high profile and excellent personalities whom he characterised with profitability. The seminar reinforced his conviction in the sector and more specifically the need for processing, value addition and marketing interventions. The Honourable Minister affirmed that SPGS's goals and mission were in line with the Uganda Vision 2040 to transform Uganda into a better and holistic society by moving from subsistence to commercial forestry. He also noted with concern that there is a decline in forest cover all over the country, and as Ugandans we need to change our mindset, because if we don't, there is a looming disaster.

The Minister suggested the following interventions:

- Plant a tree for every occasion
- Produce more appropriate species
- Government is to review its ban on land allocation in the central forest reserves with an aim to lift the ban as soon as possible
- Support value addition initiatives;
- The forestry sector should organize itself because organization is strength
- Network among stakeholders
- As a sector we should ensure that sustainability is in our hands to ensure social and economic stability.

For detailed presentations and proceedings visit www.sawlog.ug

A note of thanks to our co-sponsors:



Daily Monitor
TRUTH EVERYDAY

from p.9

Clients Meeting & Field Safari

Day two of the safari was a formal meeting at Sunset hotel in Jinja. In the meeting, key issues regarding clients' performance in terms of their contract obligation with SPGS were discussed. Clients were reminded of SPGS phase II target of 30,000ha achievable by December 2013, since this would seriously determine if donors would fund SPGS phase III. Accordingly, SPGS requested clients who will not be in position to complete their contracts, to make formal communication to the project such that the areas could be transferred to other clients who have planted beyond their contract. Updates on upcoming events in the project were given, for example, next training plans, inspections and regional tours, nursery and contractor certifications and seed/seedlings issues. UTGA made a presentation and urged those who have not registered to do so such that they too may enjoy their services. Challenges faced by farmers like encroachment, drought and many others including future

of SPGS were discussed.

A number of questions were raised and answers given as summarized on table below:

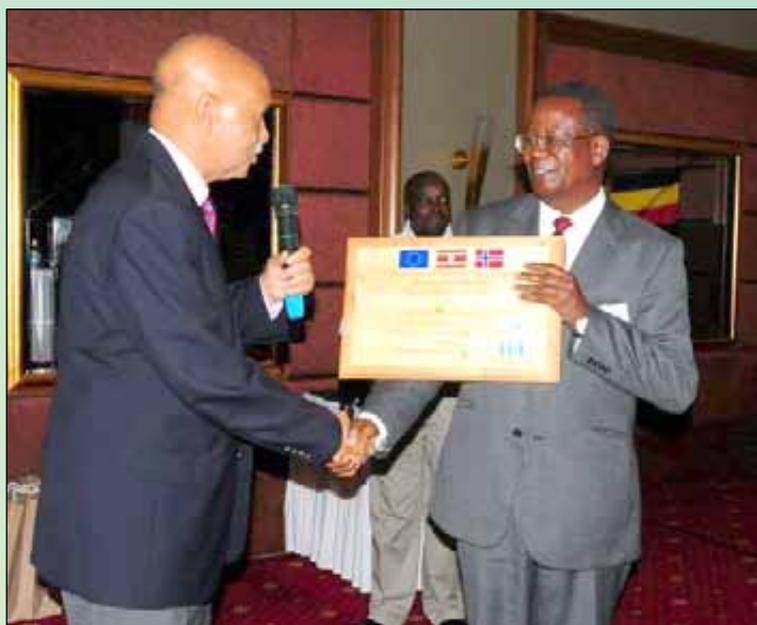
1. What is the future of SPGS and tree planting in Uganda, particularly beyond 2013? The Project Manager (PM) mentioned that the donors are willing to fund phase III of SPGS but this would largely depend on the ability of SPGS to absorb the currently available funds. He also pointed out that, if the donors fund another phase of the project, then it would most likely be in a different format from the current SPGS. The donors would wish to see SPGS put more emphasis on wood processing and value addition. This same message had been echoed by Bogdan Stephanescus who represented EU on day one of the field safari.
2. What should be done about the changing weather patterns? Clients were advised to do better planning.
3. What will happen to those farmers who have planted above their contract? PM advised every participant to

cont'd on p.25

PHOTO GALLERY I - HIGHLIGHTS FROM THE COMMERCIAL FORESTRY SEMINAR



→ The sector was well represented. Delegates included officials from the government, timber dealers, commercial tree farmers, and various professionals in the forestry sector



← Prof. Ephraim Kamuntu, the minister of water and environment receives a plaque presented to the Government of Uganda by private commercial tree farmers, in appreciation of government support to the sector. Prof. Mondo Kagonyera, presented the plaque on behalf of the commercial tree farmers.

→ The turn up for the seminar was exceptional. The audience was over 190 participants.





PHOTO GALLERY II - LAUNCH OF SPGS NORTHERN UGANDA OFFICE



←The State Minister of Water and Environment; Betty Bigombe, launching the SPGS Northern Uganda Office while other delegates cheer on.

→From left to right; The PS Ministry of Water and Environment; David Obong, the State Minister for Water and Environment; Betty Bigombe, and Bogdan Stephanescus from the European Union delegation.



←On the way to Gulu to officially launch the SPGS Northern Uganda Office, the PS of the Ministry of Water and Environment and a team of delegates from the European Union and the Norwegian Government visited the plantation of Benon Luggya (extreme left), a client of SPGS in Nakasongola.



PHOTO GALLERY III - SPGS IN S.E ASIA



←SPGS going places? Ladies from the Philippines wearing SPGS branded caps pose for a picture. This was during an international conference on Water and Soil Conservation in Bangkok - Thailand in Sept 2013.

→SPGS was represented at the Soil and Water Conservation conference in Thailand and presented a paper on how the SPGS model in Uganda has enhanced and promoted conservation. Inset is Sande Dickens, SPGS project manager delivering his presentation at the conference.



↑Participants at the Water and Soil Conservation Conference in Bangkok, Sept 2013.



EucaIyptus Clones

DID U KNOW?

Hybrid eucalyptus trees can be engineered to have certain traits such as greater tolerance to temperatures, disease resistance, and better growth rates.

Clones provide genetically superior, fast growing, and best quality planting stock for improving net returns.

High yields and better quality wood from clones mean lower per unit production costs and very high net returns when compared to conventional seed route plantations.

Clonal forestry gives you complete control over the quality and genetics of your plants. Only one parent is required which eliminates the need for pollination.

Individual plants within clonal forests are uniform and genetically similar to the parent stock (exact copies of the parent plant).

Clonal Forests tend to have shorter rotation than seedling forests since they are highly productive (fast growth and high yield).



HeartWood

8 PAGES OF SCIENCE, REVIEWS AND OPINIONS

No. 14 (2013)

THINNING AND PROFIT

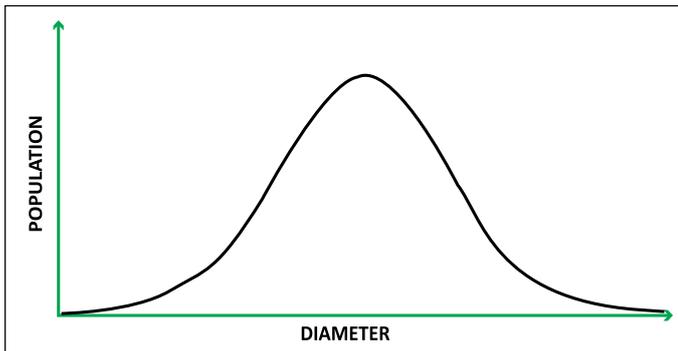
by Warren Rance (SPGS Chief Technical Advisor)

IN THIS ISSUE:

- Valuation of Forest Plantations
- Timber Market Report
- Forest Inventory, Mapping & Data Management

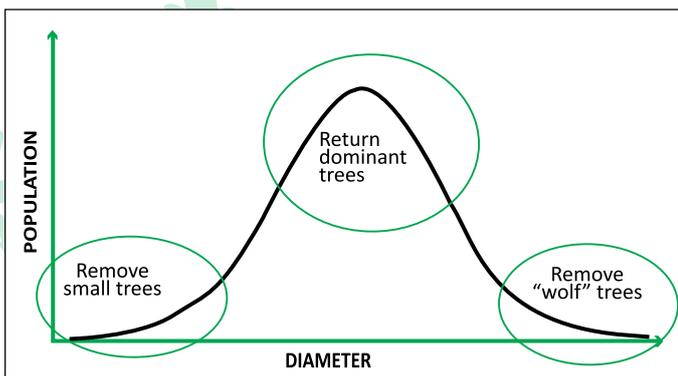
Plantation thinning is the selective removal of trees in one or several operations during the rotation of the crop, primarily undertaken to improve the uniformity and quality of the plantation as well as maintaining the rate of growth of the stand. The ultimate goal is improved profitability of subsequent harvests and/or the development of desired structural attributes such as form and stem diameter. If a plantation owner does not carry out well timed and planned thinning operations, it shall negatively affect the plantation value and profitability.

Figure 1. Normal population diameter distribution



Commercial forestry can be compared to a factory, whose aim is to produce timber of uniform characteristics which serves to improve utilisation of the logs. By developing uniform plantations, the efficiency of downstream activities can be improved. In a normal plantation population, there is usually relative normal range of diameter variation between the trees. With improved seed, the diameter variation between trees is reduced but still its distribution resembles a normal population (Figure 1 above).

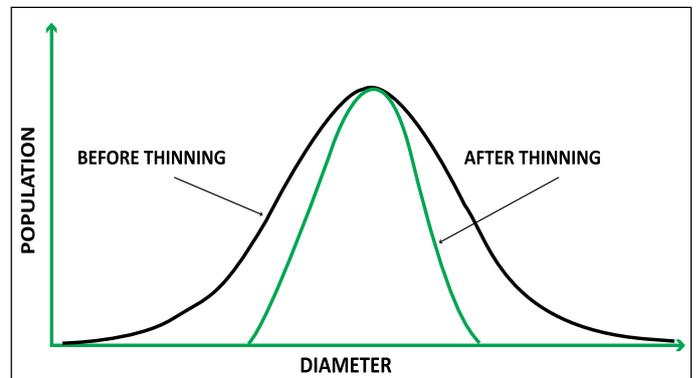
Figure 2. Objective of thinning



One intention of a thinning operation is to reduce variation between sizes of trees and thereby simplifying management and improve the ultimate utilisation of the logs produced. This is done by removing smallest trees as well as the largest "wolf" trees. Wolf trees tend to dominate and thus reduce the performance of neighbouring trees (Figure 2).

The goal is to remain with a stand of improved uniformity (Figure 3 below).

Figure 3. Thinning reduces variation



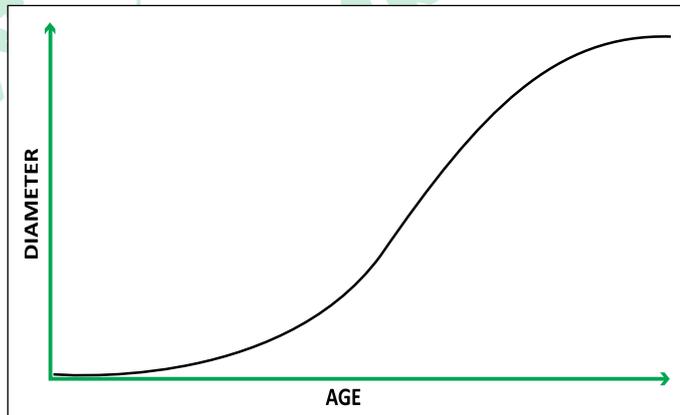
The second intention of thinning is to improve the *quality* of the plantations which directly impacts on the financial returns of the business. This involves the removal of poor quality trees such as smaller trees, trees of poor form (e.g. skew bole, excessive taper, buttressing), trees with undesirable characteristics (e.g. heavy branches, foxtails) and trees with visible defects (e.g. forks, wind damage, disease). The rate of growth also impacts on quality but shall be discussed under growth rate below.

The third intention is to manipulate or manage the *growth rate* of the trees. To explain this reference is made to the growth curve of a tree (Figure 4)

In its natural environment, without competition the growth rate of a tree changes through its lifespan, with early growth being faster, slowing down as the tree reaches maturity. A plantation is not the natural growing environment of a tree and commercial forestry, in a bid to make more efficient use of the land, increases the stems

per hectare or stocking density. This increased stocking results in competition between trees for space, nutrients and water.

Figure 4. Growth curve of a tree



Competition reduces the growth rate of trees and as such, foresters use thinnings to relieve the plantation of competition while maximising the utilisation of the land. By relieving the competition, we maintain an optimal growth rate for desired trees (remaining trees). Uniform growth rates result in uniform increment which results in uniform strength characteristics. The timing of this thinning activity is critical to maintain growth rates.

COMMON MISTAKES

Delayed thinning

There are many reasons for delayed thinning, which range from poor planning, through lack of resources to lack of market for thinned logs. The reasons may be many but the result is almost always reduced profitability. Delays in thinnings result in the onset of competition. Competition results in reduced growth which in turn results in low profits.

In addition, delayed thinning results in increased stress to the trees, which are then more likely to be susceptible to pests and diseases. Delayed thinning results in variation in growth rate, which negatively affects the uniformity of timber properties. Maintaining growth rate provides an improved final harvest volume and better quality timber. Figure 5 compares the cross sections of logs with a uniform and non uniform growth rate respectively.

Figure 5. Cross sections of a logs with a uniform and non uniform growth rate

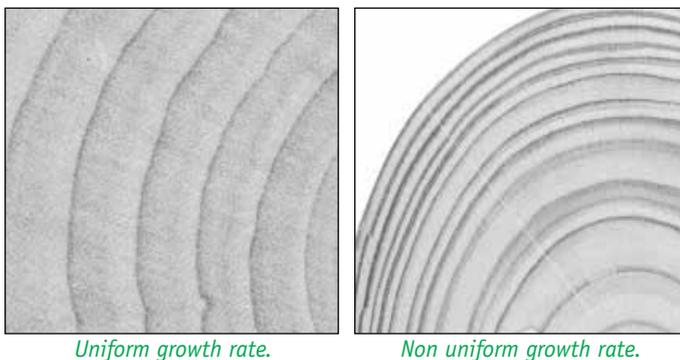
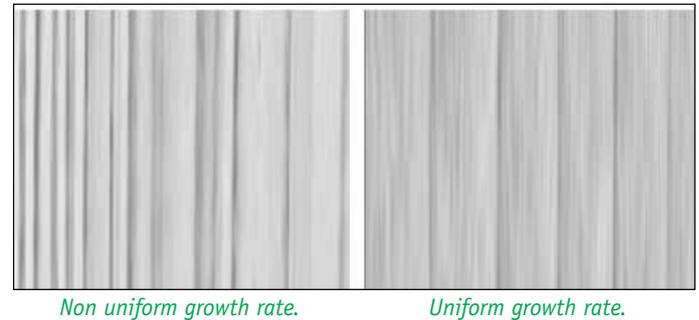


Figure 6 compares the faces of boards sawn from trees with non uniform and uniform growth rates respectively. Note the variation of grain on timber sawn from non-uniformly growing trees, which

is an indication of varied wood densities. This has an effect on values for visual grade joinery timber and to a lesser extent values for structural timber.

Figure 6. Boards sawn from trees with non uniform and uniform growth rates



Under thinning

Under thinning is the failure to remove trees to the required tree density or stems per hectare (spha). This has the same effect as delayed thinning mentioned above.

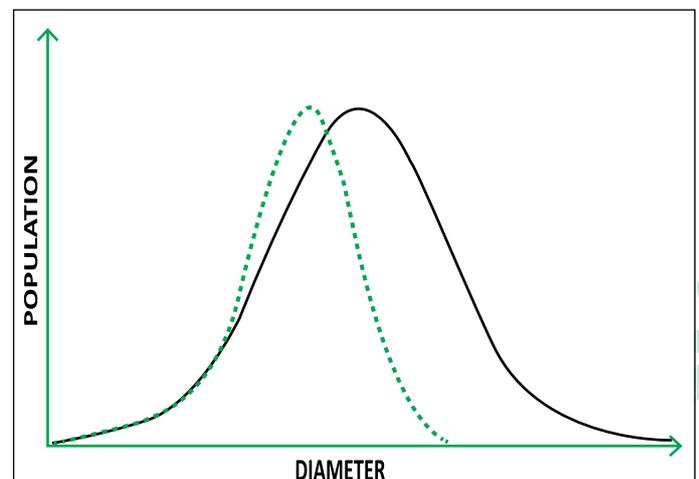
Poor selection

Poor selection of trees to be removed results in reduced quality and possibly reduced growth of the plantations. Reduced quality means reduced value. Plantation owners should ensure that the operation is performed correctly to ensure that both quality and spacing selections are correctly undertaken. This can be done through adhering to guidelines and training of staff.

Top-down thinning

This can also be referred to as market driven thinning. This involves the removal of the best trees in the plantation often for products such as poles. It is becoming common to find that timber plantation owners remove logs demanded by the market. In this case the quality of the plantations is negatively affected as the poorer trees remain behind for future harvests. The result is that the long term profitability is sacrificed for quicker returns. It is commonly emphasised that thinnings are determined by silvicultural objectives and final harvest by the market. Figure 7 below illustrates the result of a market driven thinning.

Figure 7. Skewed diameter distribution from a topdown thinning



cont'd on p.4

VALUATION OF FOREST PLANTATIONS

by SPGS's Bahizi Peter (SPGS Senior Plantation Officer)

INTRODUCTION

"What is the value of my forest property or plantation?" is a very frequently asked question. This question is far simpler than the answer. Fact is, there is no final simple and objective answer to this question. The value of your forest could be:

- a) What at least one person is willing to pay for the plantation, after an open competitive bidding (market value)
- b) What has it cost you to get and establish the plantation, up to its current condition (cost value)
- c) What you could expect of future net income from the plantation (net present value)

There is no rule that the one way of estimating the value is objectively more correct than the other, but the different ways of forest valuation serve different purposes. Ideally they would give the same result, but this demands that every presupposition is correctly set and commonly known, a situation that rarely exists. At present in Uganda, there is no transparent open market for forest plantations. It is therefore hard to identify a level with market prices. Market prices will for this reason not be elaborated upon in this document, but it is probable that the net present value calculated from the expected future income will give an indication of the market value.

Important parameters when conducting the valuing exercise:

1. **Rate of return:** This is the expected outcome from the forest investment in relation to potential alternative investments that compete for the same capital. This is an important parameter considered in forestry as the expected income is received after a long period. It attempts to answer the common question; does it pay to wait?

2. **Site index:** The site index is a classification of the growth conditions in terms of capacity for wood production. Forests of different site classes are expected to grow differently. Plantations at the highest site index are expected to grow faster and produce more volume than those at lower site classes.

The rotation period at the highest classes should then be somewhat shorter than for the lower classes. This gives an impact to the value of the calculation, and we make one calculation for each site index or group of indexes. For example, the expected rotation period for *eucalyptus grandis* for the different site indices are:

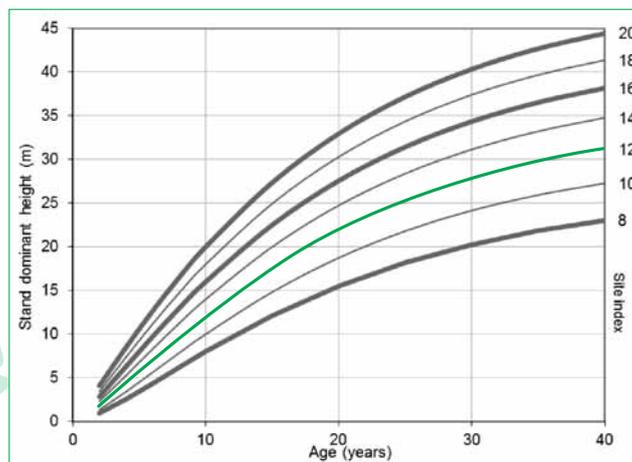
Determining site index. There is a close

Site index	Rotation period	Standing volume/ha at the time of final harvesting
Good (34)	10 years	251 m ³
Medium (30)	12 years	213 m ³
Poor (26)	14 years	171 m ³

**Expected standing volume is based on the growth model made by Alder 2003*

correlation between the volume production and the tree heights, hence site index classification is linked to the tree heights, and is described as the expected heights of the dominant trees at 10 years. Height curves are generated for the entire rotation, so by measuring tree height at any age, preferably older than 5 years, one can determine the site index from the curves below.

Site index curve



Source: SPGS/UNIQE 2010

3. Location of plantation or distance to the wood market.

Distance to the wood market will impact the transportation costs for the wood and in the end the stumpage price. The stumpage

price is the price for round wood, sold as standing volume (at the stump). For the sawlogs, the important distance is how far it is to the closest saw mill, or when using mobile sawmills, the distance to the timber market. For smaller dimensions, the distance to the processing industry, e.g pole treatment plant, chipboard plants etc, is of importance.

4. Tree density

The tree density is important for the total volume production. If the tree density is low, this could to some extent be adjusted during the thinning period, but this will give less income from the thinnings. A low density will normally also impact the final wood quality, as the possibility to take out the low quality trees through thinnings and still keep the necessary amount of trees for optimal volume production is reduced or eliminated. If the tree density is low, the calculation should be adjusted by reducing the volumes from thinning and if considered necessary, also the expected stumpage prices from the harvestings. If the tree density is too low to achieve optimum growth after the 1st and 2nd thinning, the total volume production could be significantly low.

5. **Tree quality:** If the tree quality is bad, it will both affect the expected stumpage prices from the plantation, as well as the rotation period. If you are not able to produce a reasonable share of high quality sawlogs from the plantation, it will not be profitable to keep the rotation period long as for a good quality plantation. The main reason for the last years of the rotation period is to increase the quality of the logs. If the basic log quality is not good enough to serve as a starting point for a high quality log, it does not give sense to continue the production.

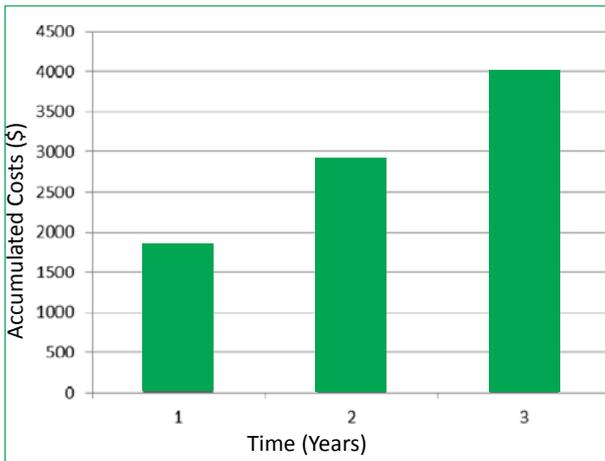
6. **Age of the trees:** The age of the trees directly influence the value of the plantation. The older the trees, the higher the value of the stand. This is due to reduced time for waiting for final cutting and income.

APPROACHES FOR VALUATION

There is no objectively correct value of a forest. At the very end, the market decides the value, but currently very little market experience exists in Uganda for this purpose. After ascertaining the parameters outlined above, an acceptable market value of the forest can be calculated. Two approaches are used for this purpose, these are:

❖ THE COST APPROACH

Values based on the costs are an alternative calculation, where we calculate the opposite way compared to net present value. The starting point for calculation of the cost value is the actual cost for establishing



and maintaining the plantation. This approach is normally not very well suited for value calculation of mature forest stands, but could contribute to paint the picture of the value of younger plantations. The starting point for calculation of the cost value is:

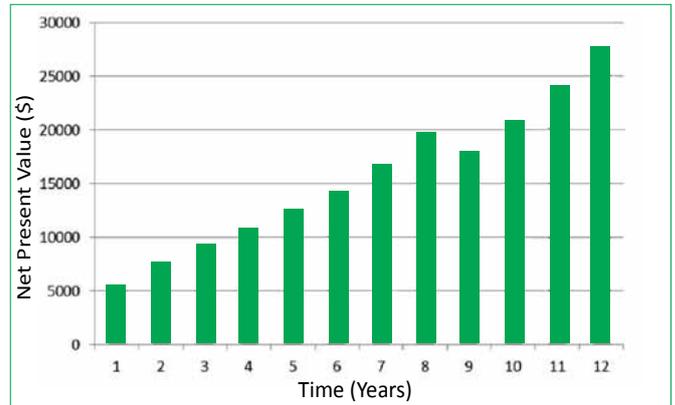
- ❖ The total actual costs for bringing the plantation to

the current conditions

- ❖ The expected rate of return (real) from the investment.
- ❖ The time gone since each cost occurred.

For example: accumulated cost for establishing a plantation of eucalyptus for each of the first years of the rotation. Accumulated costs correspondingly reflect the value of the stand at different times.

Net Present Value per ha of pine plantation over the years



❖ INCOME APPROACH

Income approach in the understanding of «net present value» is the mostly used and normally the best suited valuation method for forest plantations. The idea of the method is to calculate the net value today, of all future income and costs from the assets that are subject for the appraisal. Values and costs will appear at different times, but all are discounted to today and become comparable.

Note: The above is a review of a study by Erling Bergsaker'; *"Values of tree plantations in Uganda"* [Kampala October 2010]. Commissioned by UTGA.

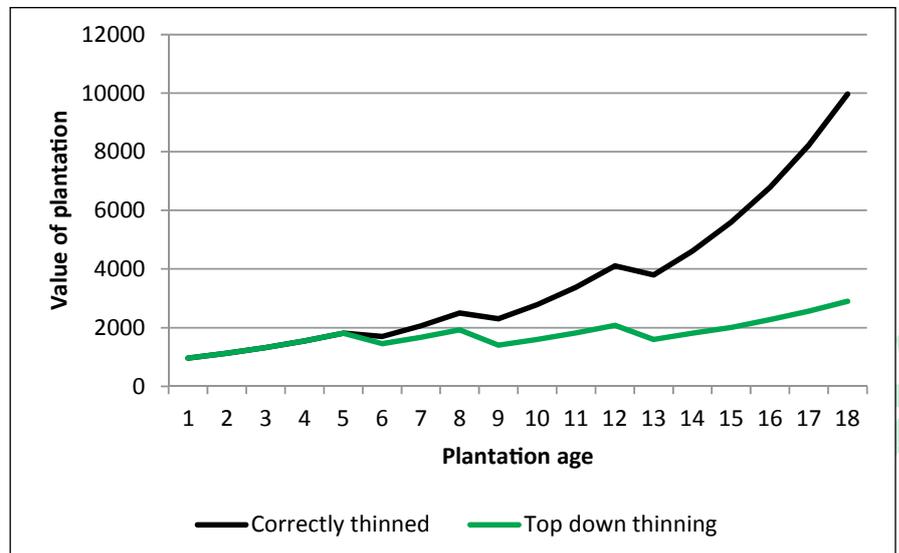
from p.2

THINNING AND PROFIT

The mean diameter is reduced by selecting the better trees or allowing the buyer to select trees. Topdown thinning would affect the quality of trees in the same manner and ultimately affects the residual value and profitability of a plantation in the long term (Figure 8).

Figure 8 shows a sample plantation with estimated figures and attempts to illustrate the negative long term financial effect of market driven thinning. Long term value is sacrificed for short term revenue. There may be cases where log specifications dictate harvesting of specific trees, but these operations should be carefully planned and monitored to avoid comprising residual quality and long term returns.

Figure 8. Value development comparison standard versus top-down thinning



TIMBER MARKET REPORT- Q2 2013

by SPGS's Bahizi Peter

Table 1: Current retail prices for selected timber species and sizes

Specie	Size (inch x inch x foot)	Average Price (UGX)
Eucalyptus	Poles 4-6 inches	3,000
Eucalyptus	4X3X14	17,000
Pine	12X1X14	45,000
	6X2X14	19,000
	4X2X14	14,000
Mahogany	12X2X14	90,000
	8x2x14	75,000
Mahogany(Congo)	12X1X14	75,000
Mahogany(Uganda)	12X1X14	65,000
Mvule	12X2X18	145,000
	12X2X14	95,000
	8x2x14	95,000
Nkalati	6X2X14	50,000
	12x2x14	75,000
Kirundu	12x1x14	60,000
	12X1X14	7,500

Kampala retail prices, 2nd quarter 2013 (Source: SPGS)

Table 1 above shows the average timber prices as reported by timber dealers around Kampala in the second quarter of 2013. Generally, the prices remained constant.

Figure 1-3 show the price trends of major species traded in Uganda in the recent years based on dealers' retail prices in Kampala city.

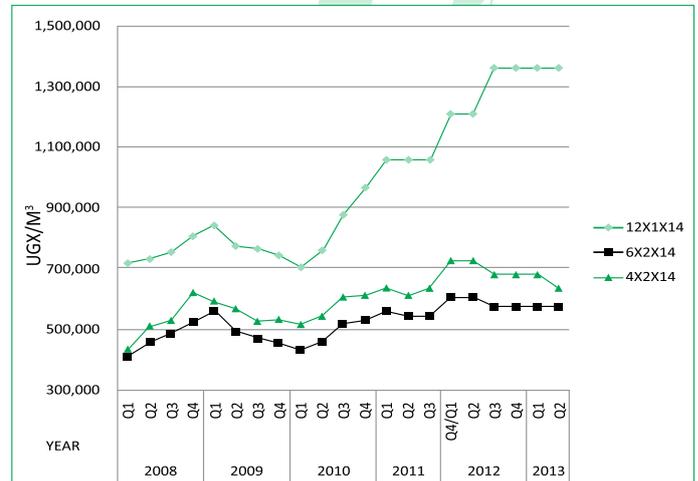
Generally the timber prices maintained constant.

The constant prices were attributed to stability in the supply. A temporary equilibrium had been attained between the supply side and demand side.

Notably was a reduction in small dimension pine timber (6x2). As the Uganda plantation reach a thinning stage both first and second, small logs are being converted into small dimension timber by the use of wood misers and pit sawing thus the reduction in the price.

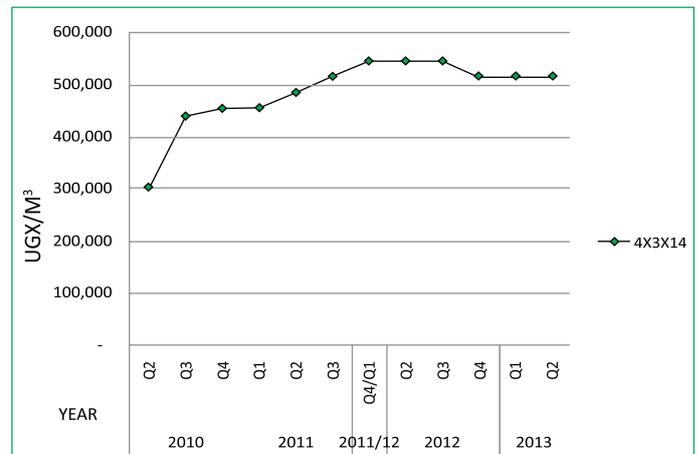
The prices for most imported hard woods i.e. Mahogany (*Khaya spp*), Mvule (*Milicia spp*), and Nkalati (*Afrosesalicia cerasifera*) generally, remained constant. A slight increment for mahogany and mvule wood was noted, traders attributed this to a rise in tax levy in D.R Congo. Though the prices did not have a significant rise, a roaming shortage of short planks was noted this was mainly due to the taxation system in D.R Congo that is not size sensitive hence most traders preferred to engage in long planks.

Fig 1: Price trend for pine



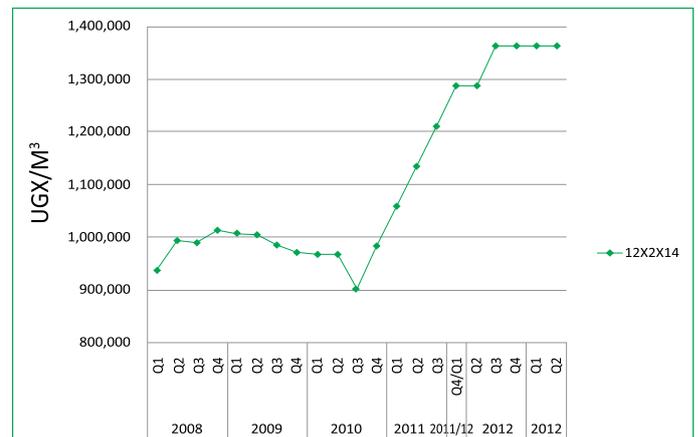
(Source: SPGS)

Figure 2: Price trend for Eucalyptus



(Source: SPGS)

Figure 3: Price trend for Mahogany



(Source: SPGS)

EUCALYPTUS POLES MARKET

Table 2 :Current retail prices for treated and untreated Eucalyptus poles for different sizes

Size (Metres)	Price(Seasoned) (UGX)	Price(Treated) \$
10	165,000	160
11	200,000	185
12	255,000	209
14	292,500	265

(Source: SPGS)

*\$ =UGX 2,550 @ 25/09/2013

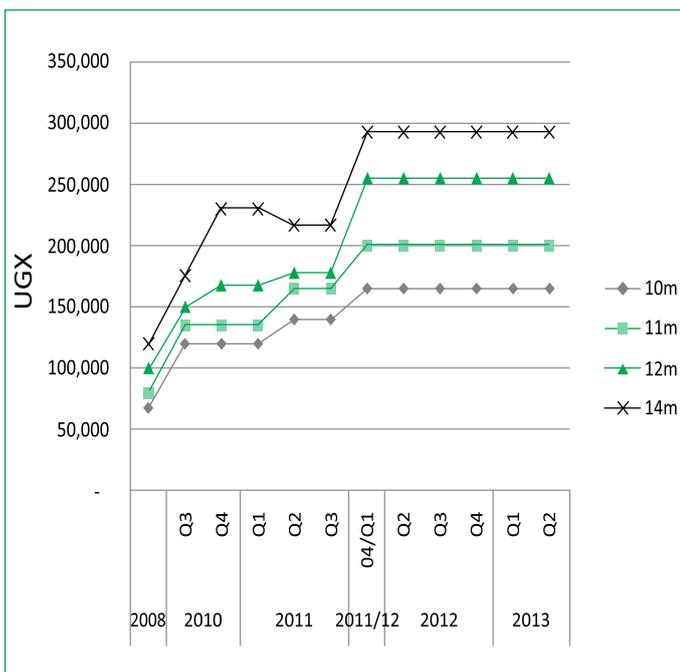
Table 2 shows the current prices for seasoned poles and the selling prices for treated poles as reported by the different pole treatment plants operators.

Figure 4 shows the price trends of the eucalyptus poles in Uganda over the past few years as reported by the different pole treatment plant operators.

A constant price was observed, this was attributed to tendering process by the UEDCL (Uganda Electricity Distribution Company Limited) where the purchase and the sale price stands for a given year.

Its worth noting that there is a continuous supply of poles from farm gardens mainly from western Uganda which had been established in the 90's as woodlots for fuel wood.

Figure 4: Price trend for Eucalyptus poles



(Source: SPGS)

Timber Stories From Around The World

FROM CENTRAL/WEST AFRICA

Producers are finding it difficult to respond to even modest increases in demand. Some positive log and sawnwood price movements have been reported since the end of August as demand continues firm in most markets.

Demand for logs has improved and the demand pull has given producers the opportunity to negotiate for better prices especially as log availability remains tight. The problem is that, because of problems in sourcing logs, producers are finding it tough to respond to the improved demand, especially as this is focused on only the more popular species.

Buying is focused on popular species despite supply problems. Producers in West Africa say, demand from European importers has improved slightly but remains stuck on selected species such as azobe, padouk and sapele. In response to supply problems with sapele, some buyers are considering sipo as a substitute.

Buyers from France are reported as more active while UK business continues to be very slow and unlikely to improve in the short term. Says analysts.

Sawnwood exports from Gabon appear to be declining fast and analysts say this has much to do with the tighter government control of forest operations. The log shortage has resulted in some sawmills remaining closed temporarily or cutting back on production rates.

FROM BRAZIL

Forest Service recommends tax breaks for industry

A study prepared by the Brazilian Forest Service (SFB) has found that the tax burden levied on timber products in the Amazon region is 32% along the entire value chain from harvesting to final consumer.

The authors propose reconsideration of the tax levels and even some exemptions to strengthen the Amazon region forest economy and increase the competitiveness of tropical timber products.

There are proposals for exemption of the tax on Contribution to the Social Integration Program and Civil Service Asset Formation Program (PIS/PASEP), the tax on Contribution for Social Security Financing (COFINS) and the tax on Industrialized Products (IPI).

According to SFB, the entire production chain for Amazonian timber generates some R\$7 billion, of which it is estimated R\$2 billion is paid in taxes. The exemption proposals will involve a loss of revenue for the government, for example the tax on circulation of goods and services (ICMS), estimated loss R\$ 40 million. The COFINS tax loss would be R\$19 million and the IPI tax loss would be an estimated R\$28 million. The SFB study says the tax reductions will result in increased competitiveness of tropical wood products.



Forest Inventory, Mapping and Data Management

by Andrew Akasiibayo (SPGS Plantation Officer)

Forest inventory, mapping and data management are connected parts in forest management and informed decision making. **Forest inventory** is the systematic collection of quantitative and qualitative data of the forest resources in a given plantation estate for assessment or analysis. Forest inventory information is generally reported for management and/or administrative units (e.g., Cluster, region, etc) and/or for thematic or resource classes (e.g., forest type or age). When carrying out inventory, important data on species type, diameter at breast height (DBH), dominant height (4-5 trees per plot), site quality, age, and defects has to be captured. From the data, one can calculate the stems per hectare, the basal area, the stand volume, as well as the expected value of the timber in relation to the prevailing markets.

Inventories can be done for other reasons other than just calculating the value of the forest. For instance, they can be used to assess the conditions of the forest (e.g. determination of potential fire hazards, tree health, condition of site - whether rocky or deep soils.). The aim of the statistical forest inventory is to provide comprehensive information about the state and dynamics of forests for strategic and management planning. This enables forest owners to evaluate whether current forest management practices are sustainable in the long run and to assess whether current policies will allow the next generation to enjoy forestry.

In order to ascertain the value of your stand, there is need for an assessment, which can be done either by establishing permanent plots (PSPs) or temporary plots (TSPs) or a combination of both. Temporary plots are well suited for obtaining estimates of the current state of the forest, while permanent plots are better suited for obtaining estimates of

change over time. Permanent plots as the name suggests, are sampling locations that are monumental or otherwise uniquely identified and routinely re-measured at different points/intervals (let's say 2 years) in time, until the rotation of the crop. For plantation measurements, this usually means that a plot center (circular plots) or plot corners (rectangular plots) are permanently marked. Individual trees within the sample plot are usually marked, and care is taken to measure variables on individual trees and at the plot level as precisely as possible using the available measurement instruments. Temporary plots on the other hand are sampling locations where independent surveys can be done at different times, and only measured at one time. Temporary plots are mainly applicable when one is carrying out rapid assessment especially for estimation of basal area per hectare or stand volume important in guiding foresters, for example regarding harvest planning (when to start and end the harvesting operations, how to phase the operation).

Numerous data on tree /stand parameters including species type, site quality, crop age, and defects can be collected especially on Permanent plots using several tools like;

- Compass - Used for direction
- Suunto Clinometers - Used for measuring heights
- diameter tape /Callipers - Used for measuring DBH
- Biter-litch stick - Used for Basal area assessment (mainly in TSPs)
- Geographical Positioning System (GPS) - Geo-referencing in case of establishing a new PSP or navigation to an existing PSP.
- Pen and plot data sheets - to record data.

Plot data sheet

Data capture starts at the beginning of the planting. Relevant information at this stage will include, seed or seedling source /origin (e.g., Brazil or Australia), area planted, species planted (*Pinus caribaea* or *Eucalyptus grandis*), spacing used (3m x 3m), date of planting (e.g., 12/10/2012). Other information to capture may include the land preparation methods (e.g. slash, burn, spray, plough, pit, lining) and the associated costs, the project area (e.g., Lwamunda plantations), date of assessment (cruise date), compartment name, plot radius, plot coordinates, number of trees in a plot etc. It is important to record such kind of information because it is a baseline for the subsequent inventory and decision analysis. Forest Mapping is the preparation of cartographic representation of forest cover (maps) showing the distribution, boundaries and key attributes of individual forest stands or compartments. Several methods can be used to do mapping, namely; remote sensing, boundary tracking to determine the compartment area using a GPS and many more. Mapping is one of the areas where technology advances fast. Currently the most used and easily available tool in the country for mapping is the GPS, which among others is important for giving you a good estimate of the areas. The handling and used of this gadget can best be done hands on.

Now with inventory and mapping data in our hands, it's important that we manage it well before it is distorted. Data management is the process of organizing (recording, storage, retrieving, and analysis) data captured to help in making rational decisions. It involves developing practices and procedures dealing with data and then executing these practices on a regular basis. Data can be best managed in a database. Numerous computer software programs exist that can be used to design proper



PSP Plantations Form 1			District			Measurement date	Sheet no for this plot		
Plot No	Forest		Compartment	Map sheet	UTM East		UTM North		
Planting year	Main species		Site and management remarks						
Tree No.	Spp Code If not main	Diam cm	Quality	Coded Notes	Height m ¹	Remarks		Dist (m) ²	Bearing Degrees ²

databases (e.g. Ms Access, MySQL, Oracle et.c). Some of these programs can really be sophisticated, but the key point is to choose a user friendly program that can give you an easily interpretable output or analysis. Data entered in the database from the forestry inventory and mapping operations can now be analyzed using the software of your choice to provide information that helps you to make informed decisions. For instance data on DBH, dominant tree height, tree form, plot area etc can be further processed to estimate the plot volume, rate of growth, site index, suitability of soil, the productivity of your site which can further be extrapolated to understand the condition of the stand and or estimate the stand volume and consequently determine the value of a given stand at a given age. It's from such analyses that predictions can be made. For instance, estimates of the future stand value can

be made from observed trends (increment in stand volume per year), provided you are willing to believe that past trends will apply equally, or after some type of calibration to the future.

In a situation where a saw miller (investor) is interested in establishing a milling plant, information on expected timber volumes is important. Equally, in case you want to buy or sell your plantation, its value can be well estimated using data captured from the forest stands.

Data capturing and management is very important at any single time for foresters and or investors to make rational decisions depending on the objective. Timing on when to gather this data cannot be underestimated especially with aspects that require routine monitoring. The picture on ground though is a few

plantations have established these plots and gone further to capture and record this kind of data. Questions like, how much timber volume we expected from a stand, cluster or region in a given time, may at the moment be very difficult to answer, yet this is basic information that an investor, interested in setting up a sawmill would need.

Reference: SPGS Tree Plantation Guideline in Uganda, Chapter 18 - Measuring Trees and Monitoring Growth

Send us your articles or reviews on any topic of relevance to tree planting in Uganda.

Learn from each other's experiences. There is no need to make the same mistakes as the past"



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Eucalyptus Clones



DID U KNOW?

The productivity of these genetically superior clones of Eucalyptus can be 20% to 30% higher compared to the productivity of normal seedlings.

Clonal planting stock yields uniform high quality wood with large clear bole suitable for veneers, timber, poles, pulpwood and other uses.

The biggest threat to clonal forestry is the risk that all offsprings share common susceptibility to adverse situations as there is no genetic variation (narrow genetic base).

Raising clonal planting material requires sophisticated and costly infrastructure and inputs, compared to raising seedlings.

Clones are product and site specific.

Having clonal planting material is not everything required to have an economically feasible forest business. As a matter of fact this is just one of the requirements and nothing can substitute proper silviculture practices such as land preparation, pitting and timely and adequate weeding



SPGS TRAINING UPDATE

by Zainabu Kakungulu (Technical Services Manager)

Training and capacity building is an important element of developing and growing the forestry industry. With an emphasis on technical aspects, SPGS training is meant to provide participants with up to date standards in plantation forestry. For the period June- To date (October 2013), we have had a number of key courses; **Contractors training.** We continuously strive to improve and build capacity of forestry contractors, as a way of preparing them and equipping them to be better forest managers. **Pest and Disease identification and management:** As the area of forest plantation increases, so does incidences of pests and diseases. This course particularly addressed the issue of identification and management of pests and diseases in nurseries and forest plantations. A total of 25 participants were trained. **Basic Chain Saw Operators Course;** There may not be official statistics of people who have died as a result of unsafe

use of chainsaws, but fact of the matter is, there are quite a number of lost lives that can directly be attributed to chain saws. As part of our effort in improving and promoting standards, in August 2013, SPGS contracted the services of an experienced and professional chain saw operator from South Africa to train chain saw operators. A total of 20 chain saw operators have been trained over a one month period. This includes Josephat Kawooya of SPGS, trained to become a trainer. Other courses included; **Forest Finance and Economics;** targeting SPGS staff, UTGA and other Forest professionals from NaFFORI, NEA, FSSD, **Investment plans and management;** targeting investors, Nursery **operators** training and **Community training.** The most recent was a plantation maintenance course which covers detailed practical and theoretical aspects of pruning and thinning commercial forest plantations.

Planned courses [Nov – Dec 2013]

No.	COURSE	DATE	TARGET	VENUE	Fee [Ugx]	NO. OF PARTICIPANTS
1	Teak nursery training	25 th -27 th Nov	Nursery Operators	Arua	70,000	25
2	Fire management	2 nd – 4 th Dec	Forest owners, managers and Contractors	Lira	70,000	25
3	Clonal Nursery training	2 nd - 6 th December	Nursery Operators	Mityana	150,000	25
4	Teak Silviculture	8 th – 12 th December	Forest owners, managers and Contractors	Gulu	150,000	25



← Josephat Kawooya (SPGS) demonstrating to trainees how to crosscut a log. This was during a chain saw training

PHOTO GALLERY IV - TRAINING



←Prof. Philip Nyeko of Makerere University training forest managers and workers on pests and disease management in tree plantations during a training in Mayuge.

→Trainees learning how to maintain chain saws. This was during a chain saw training in Mubende, sept. 2013



←A nursery worker at KVTC supervises Francis Ssali (SPGS), while he does his practical exercise of placing cutting in jeffy bags. Four SPGS staff were in KVTC to learn about Teak.



PHOTO GALLERY V - SPGS CLIENTS' TOUR TO RSA



← *SPGS clients had an opportunity to tour STIHL, one of the top suppliers of chain saws.*



(Top and to the left) Clients appreciate the scale and quality of treated timber products at Treated Timber Products (TTP) company in Wartburg. TTP is the largest wood preservation plant in South Africa

LESSONS FROM THE SOUTH AFRICA FORESTRY TOUR



By Tina Achilla

In July 2013, a team of 10 SPGS clients, accompanied by SPGS project manager and two Technical advisors, headed for Southern Africa for the SPGS annual study tour. The tour focused on providing clients with first hand exposure to commercial forestry outside of Uganda. In addition, the specific focus of this tour was to expose the Ugandan industry to the processing and utilisation of forest products. It became evident during the trip that the forestry sector is a well networked and “in contact” with environment. Knowledge of the South African forestry industry by the SPGS technical advisors provided unique access to relevant organisations and operations. During the tour, we made numerous scheduled visits and some unplanned but relevant stops. Visiting these organisations was extremely interesting and enlightening. Most often, we would have preferred to spend a long time with each of the hosts.

Forestry Operations

Nurseries: A number of nurseries were visited, both clonal and seedling facilities. Most often, the nurseries undertook both seedling and clonal production. The scale of these organisations was large, and the nurseries we visited were in close proximity to each other giving an indication of the size of this business. Some nurseries supplied locally and others country wide. In one instance, a nursery supplied seedlings into neighbouring Mozambique.

Most nurseries used one or a combination of bark media, vermiculite, perlite and coco-peat and never used soil. The nurseries were very focused on quality as well as on hygiene, and this was evident in the quality of planting material being produced. Bad quality planting material was destroyed. These nurseries employed different methods of propagation, some more mechanical and others more manual. It was exciting

and at the same time inspiring to see the containerized and management systems used by these nurseries for controlling irrigation, humidity and temperatures. Although relatively capital intensive, these nurseries were able to produce seedlings and cuttings of extremely high quality at between UGX180 and UGX510 per plant.

Plantations; the quality of plantations was high, standards of establishment and maintenance were in most cases impressive. The tree quality and uniformity is testimony to the tree improvement program and silvicultural standards and that forestry in South Africa is a serious business. Remarks by SPGS technical advisors made us appreciate how well the industry has developed in Uganda in the past decade and that we are catching up in terms of quality plantations. We were most impressed with the cleanliness of the plantations, road infrastructure and quality of the trees.

Pruning; Most pine and some eucalyptus plantations we saw were pruned. This pruning was also carried out in the pulpwood rotations and was referred to as access pruning which mitigates the risk of fires. Mainly sawlog rotation eucalyptus plantations were pruned, but actually these were brushed not pruned. This operation took place to remove dead branches and to limit the development of dead knots in the timber. It was very interesting to see cases where 9m pruning was undertaken by workers climbing into the lower branches of the tree or using ladders to reach the desired height. The pruning quality was good to standards as encouraged by SPGS.

Thinning; we observed some thinning operations, where it was explained that thinning scheduling is driven by silvicultural requirements and not the market. The focus is on developing the best quality timber and obtaining the highest value final crop. As such the

thinnings that we saw were always selective removal of undesired trees using the criteria of space creation first and then quality next.

Extraction of thinnings is a challenge in any forestry environment. Productivity from thinning operations in terms of volumes is low. This indicates a relatively inefficient operation. We learnt that the majority of early thinnings are not commercial, meaning that no profit is expected and that revenues only defray the expenses. We observed that in some places, first thinnings were extracted manually as is done in Uganda. The road infrastructure was very good and dense allowing for very short carrying distances. We were informed that in other areas, thinning extraction was being undertaken mechanically. The cost of mechanical extraction can only be justified when the log size increases at second or third thinning stage.

Weeding; to maximize growth and for other objectives such as fuel load management, the majority of the plantations visited were well weeded with little competition to the trees. Compartments are maintained at a recommended weed control standard. This means that plantations are maintained to always conform to standards and are not only weeded once to achieve standards before an inspection, as may be the case with some of us.

Harvesting; most harvesting is undertaken by trained contractors who have appropriate machinery and equipment. These operations are focused on efficiency and safety and as a result a great deal of time and money is invested into training. We visited a manual operation which is mainly used in steep difficult terrain by smaller contractors. We also visited mechanized harvesting where the contractor harvests approximately 1000 tons a day with only 22 staff and their respective machines.

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An employee at TTP explains to SPGS Clients how pine poles are prepared for treatment as electricity poles.

These mechanical operations are highly professional. While we realize that these systems may not be appropriate for Uganda, we have to understand the contributions of the role-players in the market. Harvesting productivity is measured in tons per person per day and always related back to cost per ton. Another challenge identified was the highly capital intensive nature of the harvesting operations. Even manual operations were capital intensive. For Contractors to invest in high capital asserts, they require firm commitments from timber growers over a long period of time. It is difficult to understand how Uganda will manage without professional harvesting contractors in the future.

Processing. We were able to get exposure to a number of value addition activities. Sawmilling of both large and small diameter logs, production of poles, timber treatment, charcoal, pallets, packaging material and pulp and paper. The South African industry makes very good utilisation of the wood produced from the plantations. We saw how sawmills processed thinnings into pulp and paper, and how they treat even the smallest of poles/sticks in the treatment plants. We also experienced firsthand, how large the industry is and just how large it shall become in Uganda. The

size of capital investment in our forest industry is very large and the value of the industry is so significant that forestry shall become an important contributor to the Ugandan economy.

Forestry industry services.

The Ugandan group was able to meet with a number of service providers to the forestry industry during the tour. This enabled the group to understand the high level of service delivery required in the commercial forestry sector.

Training. Each worker/labourer is specifically trained in each of the activities undertaken. Workers are trained in many courses such as fire management, weed control, thinning and many others. The specific training programs are undertaken by private training organisations. The forestry industry supports such training providers which helps them to be sustainable and allows for innovation and up to date training.

Forestry Contracting. A large proportion of the forestry activities are undertaken by professional forestry contractors. The services range from inventories, site selection, land clearing, establishment, maintenance to harvesting and transporting. These forestry contractors are professional, capitalised with vehicles and equipment

and are substantial business enterprises in their own right. There are many benefits to having professional forestry contractors but there are also some challenges like labour management and government restriction that need to be overcome on a daily basis.

Equipment suppliers. Suppliers of consumables and equipment provide a valuable service to the industry. These are also very professional, for example chainsaw agencies sale chainsaws together with other tools, spare parts and protective equipment. These service providers undertake after-sales services, training of operators as well as training of technicians who repair and maintain equipment and tools. What was very interesting is the franchise nature of these service providers which has allowed similar services to be available in most parts of the country.

Chemical suppliers; most chemical suppliers have evolved into chemical consultants. Whilst supplying chemicals and equipment, the service providers conduct real extension and advisory services to the industry, assist foresters in selection of chemicals for specific activities, pest and disease, train workers and staff on application techniques. These suppliers have become very involved in the business and partner

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with industry in terms of innovation and equipment development.

Associations; Associations provide very important services to the timber growers. On a co-operative basis, goods and services are procured in bulk and provided to each individual grower at a more affordable price. The associations provide a timber trade services which embraces the economies of scale provided by the associated members. Many of these organisations provide technical services and in-house services such as mapping, inventory, research and marketing. This makes the smaller timber farmers competitive in the market.

In summary, it is important to understand the value of service providers to the industry which significantly reduces the transaction costs and improves access to new information.

During the tour, we observed a number of cross-cutting themes evident in the forestry industry. These themes are issues that we as visitors regarded as keys to the success and quality of Ugandan forestry development.

Quality; there is constant reference made to quality. This is regardless of the part of the value chain that we visited. People are conscious of quality, from seedlings through training, to saw blade maintenance and final products. This aligns all the role players throughout the value chain.

Safety; conscious efforts are made to ensure the safety of people throughout the industry.

Standards; The industry is as discussed above, focused on quality and in order to achieve this have clearly defined standards in place. These standards govern production and drive pricing and profitability.

Waste; It seems that wherever we went, people were continuously looking for ways of reducing waste and more importantly utilising more of the raw material as much as possible. Sawn timber is produced to reduce waste, bark is used in nurseries and gardens, sawdust and shavings are used in chicken production and off-cuts are used to fire boilers. This has made the industry

efficient and flexible.

Innovation; People in the industry are very innovative and are continuously searching for better and more efficient ways of doing things. This makes the industry adaptable to change and more efficient.

Take home lessons

In addition to the cross cutting themes discussed above the following are lessons we took back to Uganda.

Co-operation; It is evident that the reason why a large number of the smaller and medium growers have survived is due to competitive co-operation. Associations have been formed and have allowed the smaller and medium growers to compete in the same marketplace as the big growers. Associations have developed over time to provide various services to the members. These services range from marketing and processing to fire protection and research. We learnt that it is possible to become organised and form associations that can add value to the forestry sector.

Service Providers

The service providers really provide a good service to the industry. They do not just sell goods and services but provide an essential after sell service which allows the industry to remain competitive as well as innovative.

Training; the training and retention of good skilled staff allows for continued development of the industry. The sector needs to focus on developing short training courses and committing its self to ensuring that workers and investors are trained in all aspects of the sector.

Market Development; the South Africans have well developed markets, not only for the timber, but have markets for by-products that would be regarded as waste here in Uganda. For example, there is market for bark, off-cuts and small diameter planks. We need to orient and sensitise the market to start using sustainably produced timber from our plantations.

Information; information is vital to the continued development of the sector. We as players in the sector need to make sure we develop an information base which

will facilitate downstream processing and utilisation. This information is equally important for the management of our plantations and activities.

Nursery growing media; we need to develop more appropriate media for use in seedling and clonal production nurseries. In Uganda, bark is regarded as a waste product, and yet once composted is very useful in the production of planting material.

Labour issues; Ugandans need to find ways of managing labour effectively and efficiently. We should develop means of motivating and retaining skilled forestry labour. The cost of continuously replacing staff and the need to train new employees has a serious impact on forestry sector efficiencies.

The tour was very eye-opening and extremely relevant to what we are embarking on in Uganda. The insights gained have been tremendous and we have appreciated the tour so much. A great deal of effort was made by the Technical Advisors (TA's) to firstly gain access to a number of organisations. It was inspiring to see how open people were to sharing their experiences and demonstrate their processes. We would like to thank the TA's for their foresight and selection of hosts. We would also like to thank the South African forestry sector for their hospitality. Lastly we would like to thank the Sawlog Production Grant Scheme for facilitating this tour and the donors (EU, Government of Norway and Government of Uganda) for making it possible.

We believe it is now our responsibility to take these insights back to our forests and Uganda's forestry sector as a whole. People, are free to contact us and we are willing to share these insights and lessons with them.

The participants for the South African Study were; Achilla Tina, Mugabira Michael, Agom Charles, Kansime Bosco, Asingwire Jones, Sarah Byamukama, David Githua Muraya, Nahashon Mwangi Macharia, Dr. Henry Wamani and Silvia Namukisa.





APPRECIATION TO OUR HOSTS IN RSA

For a number of years now, SPGS has been exposing its clients and members of staff to other African countries' forestry. Although Kenya, Tanzania (see article on the Kilombero Valley Teak Company) and Swaziland are some of the countries we visit, our primary destination for exposure has been South Africa. The effect that this exposure has had on the forestry sector is significant and the improvement of the quality of plantations in the past 9 years is undoubtedly substantial. The Ugandan forestry sector can be proud of what has been achieved so far but should remain cognisant of the fact that we still have some way to go.

As visitors, we continue to be impressed with the quality of forestry and processing activities of commercial forestry businesses. These visits have inspired us to improve our forests in Uganda. As a sector, the South African forestry industry is well developed and has learnt many lessons as the industry has evolved. Learning from these lessons allows us to avoid making similar expensive mistakes in our own development process.

What is greatly appreciated is the manner in which we are accommodated by the forestry industry in South Africa. The open and transparent welcome we receive at the various

organisations, the willingness to share with and contribute to Ugandan forestry development is always surprising. Many organisations offer their valuable time to us and we continue to learn from each visit.

To this end, we would like to express our sincere gratitude to the South African Forestry industry and more specifically to:

Ashley Diack of Kwamahlati Training Services, Konrad Buchler of Sappi Clan nursery, Simon Thomas of KZNFPFA and the Working on Fire team, Bryn Pollard of Sunshine Seedlings, Richard Parker of Top Crop nursery, Keith Bailey of Midlands Pine Products, Tankiso Hadebe and the team at E&C Charcoal, Murray Mason and Phillip Waller at Bracken Timbers, Anthony Winter of Mondi Mountain Home, Graeme Abernethy of Pallet Link, Roy Wilson of Andreas Stihl, The MacKenzie's of Midlands Spraychem, Deon von Benecke and team at Arbor-care, Tickey von Eden of Logmech, Roger and Wayne of Husqvarna South Africa, Kevin Pillay and team of Treated Timber Products, Justin Osborne of ZAF Contracting and Andrew Rance of UCOSP.

Thank you.

We look forward to hosting you in Uganda someday.



NEW TOOLS IN CHEMICAL WEED CONTROL

by William Nowenu (SPGS Plantation Officer)



A demonstration of using low drift flat fan nozzles

Weed control remains the highest cost in plantation establishment in Uganda. SPGS has moved forward to look at the most effective ways of controlling weeds at the lowest possible cost through use of more efficient tools. Some of the new tools in chemical weed control include the boom spray, low drift flat fan and the hollow cone nozzle.

The boom spray is an aluminum hollow pipe which is attached to the spray lance on the knapsack. The boom has nozzles fitted on it at pre-determined distances and the chemical is delivered to the target weed through these nozzles. The advantage of the boom spray is that it allows the knapsack operator to spray a wide area and therefore increases productivity. The boom spray is suitable for a full cover spraying operation.

The hollow cone is an aspirated nozzle with an inbuilt air chamber. The inbuilt air chamber ensures that the nozzle produces large droplets which do not easily atomize. The droplets approach the surface

being sprayed at different angles which increases coverage. These droplets are therefore directed to the target weed and spray drift is minimized hence efficient use of herbicide. Hollow cone nozzles are suitable for spot spraying and follow up spraying operations.

The low drift flat fan nozzle is a suitable nozzle where the need to reduce drift is crucial. The spray tip produces droplets which have air bubbles in them and this reduces their drift potential. Like the hollow cone, the low drift nozzle tip channels the chemical to the target plant. Low drift flat fan nozzles are suitable for full cover spraying operation.

The improvements in weed control tools are aimed at making chemical weeding a more effective and efficient method of weed control. Hence, even with all these improvements, there is no substitute to training and doing spraying operations in the right conditions in regard to less windy conditions. SPGS has samples of new weed control tools and you can drop in our office and have a look at them and how they work.



Flat fan nozzles

from p.12

Clients Meeting & Field Safari

write to SPGS informing about any planting above or below the contract so SPGS can plan to adjust contracts.

4. What should be done about the security of tree plantations since theft has started? UTGA advised clients to work with the police and local leaders to address this problem.
5. Will there be Community & Woodlot support in September 2013? No more funds under this budget item.
6. Can't SPGS revise the grant to take care of inflation? SPGS is reviewing the current grant and would probably consider revising it in Phase III.
7. Why are tools sold by UTGA more expensive than tools on the ordinary market? Tools sold by UTGA are of better quality than those on the ordinary market.
8. What is SPGS doing about putting in place standards in the timber market? UTGA acknowledged that regulating the timber market is an important area that they are going to put into consideration in due course.
9. What can the timber growers do to thank their donors? A team among clients was formed to lead in getting an appreciation item, to project funders and GoU, to be awarded at the next SPGS commercial forest seminar.
10. What strategy needs to be put in place to sell timber arising from thinnings since the market is already biased to standards length of 14 ft? The consumers need orientation on a variety of timber dimensions other than being fixed on 14ft. Sensitize market and demonstrate through value addition techniques learnt from NaFORRI.
11. How far have NFA, UTGA and SPGS gone to pursue issue of lifting ban on CFR land? Not much progress, but UTGA and SPGS to continue following up on issue and update members.



UNDERSTANDING FORESTRY CONTRACTING BUSINESS

By William Mawenu (SPGS Plantation Officer)



Professional forestry contracting service providers are key to development of the forestry industry

The intention of this article is to get information out into the industry on the situation of contractors. There is an urgent need for development of highly professional forest contractors in the industry. The big question however is, what should be the ideal forest contracting business? In order to have this known within the sector, we need to understand the following:

- ❖ The status of the industry and contractors today and
- ❖ What the industry needs
- ❖ To do this, I would like to write a summary of the above in two paragraphs. Thereafter we need to illustrate what is required by describing the following:
 - i) Characteristics of a commercial forestry sector
 - ii) Investor / Owner requirements
 - iii) Contractor requirements

Characteristics of commercial forestry in Uganda

- ❖ The commercial forestry sector must meet international forestry standards in order to remain competitive (ie: economic, environmental and social standards).
- ❖ High workloads with seasonal implications
- ❖ Commercial forestry requires trained staff and labour.
- ❖ Requires correct tools and equipment slightly different from normal agricultural supplies.
- ❖ Decentralized plantations require effective planning to maintain efficiencies.
- ❖ Many investors are not resident managers

The commercial forestry sector must meet international forestry standards in order to remain competitive (ie: economic, environmental and social standards).

Investor expectations of the contractor

- ❖ The contractor must do the operations in such a way to achieve standards such as environmental, social, safety and production standards. This in turn leads to highly valuable tree plantations.
- ❖ The contractor should coordinate implementation of operational activities.
- ❖ Investors require the contractor to manage the budgets and costs, hence the contractor needs to fit the operations within the budget.
- ❖ The investor requires the contractor to mitigate risks such as labour disputes, safety, community relations.

Contractor expectations of the investor

- ❖ Investors should provide accurate information on plantations to the contractor for properly planning and budgeting for operations e.g. tree species, age and compartment size.
- ❖ Investors should offer long term contracts to contractors as this will allow them to build capital investments and retain their labour force because they are assured of having work all year round.
 - ❖ Investors should provide contractual agreements to contractors with clear operation specifications.
 - ❖ The contract should clearly spell out the role of both the client and the contractor and this will help in protecting both parties.
 - ❖ Contractors need to invest in personal skills development such as business management and forestry standards as well as training of their staff.
- ❖ The investor should provide a range of activities to the contractor as this will provide flexibility in forest operations and mitigate weather disruptions.
- ❖ Contractors require the investor to understand the costs (e.g tools, PPE) involved in running forestry operations and how these impact on standards.
- ❖ Timely payment of forest contractors for operations that have been done as this allows the contractor to pay the labour in time.
- ❖ Contractors must plan and schedule forestry operations and this can be done through the annual plan of operations.

Ultimately the industry needs to be serious about contractors, and should realize that if contractors are to provide these services, they need to be supported. Contractors need also to be serious about the kind of future they would like and need to invest in themselves and their staff.

TOWARDS A MODERN SAW MILL INDUSTRY



by Walter Mapanda; Plantation Technical adviser

Introduction

Planning of processing facilities need to be carefully conducted to ensure the most appropriate and efficient machinery and equipment is installed. The choice of a saw mill to be developed depends on the extent of the resource base (forest) and products required by the market.

There are three types of sawmills;

Mobile or portable saw mills

A mobile or portable saw mill is the natural choice for converting small volumes of logs into timber in the early stages of processing. They can provide construction material and an early cash flow with minimal capital investments. Milling can run concurrently with road construction. They are the most economical approach for a log supply volume of about 5000m³ per year. Capital requirements are low, while quality of timber produced is good. Operating manpower is four to eight men. Such a sawmill can be located on a level area at roadside or in the compartment being thinned. Mobile or portable saw mills consist of a band or circular log breakdown saw and a board edger. Modern units of this type cost from \$80 000 to \$200 000. Examples of a band and circular saw mill would be a Woodmizer and Kara respectively. These machines involve a lot of manual log handling and tend to be inefficient as the log volume increases.

Semi – permanent saw mills

With a log supply volume of about 10 000m³ per year, semi –permanent mills are appropriate. They are used in areas with an established, reliable log extraction operation. A log transportation system must be put in place to ensure a constant supply of timber to the mill. They increase the range of products, dimensional accuracy in sizing and timber recovery from the logs. These mills can be located within a 10 to 100 km from the forest and near an established community to take advantage of existing roads, labour, accommodation and other services. Communities around such mills can provide labour and by-products can lead to the development of small secondary industries. Semi



Semi permanent sawmill

– permanent sawmills usually consist of a band or circular log breakdown saw, a board edger and trimming saw. As the log supply increases, the band saw sawing capacity can be up-graded without extensive retraining of operators. A roof must be provided as minimum protection from weather. Such a saw mill may be dismantled and moved to a new location every two or three years. The cost of semi-permanent saw mill of this type will be from \$800,000 to \$1,600,000.

Permanent saw mills

With a log supply of about 20 000m³ per year, a permanent mill is recommended. This requires extensive log sorting capacity. Auxiliary equipment such as roll cases and transfer tables are included to facilitate timber handling within the mill, as well as refuse and sawdust conveyors to assist in keeping the working area clear. It is important for log cleaning, log handling into the mill, removal of finished products and by-products to keep pace with the production capacities of the mill machinery. Permanent saw mills comprise of a band or circular log breakdown saw, resaw, board edger and trimming saw. These mills must also be provided with weather protection. The cost of this type of sawmill ranges from \$1 700 000 to \$2 500 000.



Origins and properties of the Gatsby Eucalyptus clones

by Warren Rance (SPGS Chief Technical Advisor)

History of the clones

In 1997, the International Society for the Acquisition of Agri-biotech Applications (ISAAA) AfriCentre identified a critical fuel-wood deficit looming in Kenya. In response, the ISAAA initiated the transfer of genetically improved clonal Eucalyptus from South Africa as a measure to offset the fuel-wood deficits in Kenya. With funding from the Gatsby Charitable Foundation and partnership with government forestry institutions, an agreement was reached with Mondi Forests of South Africa to share high performance eucalyptus varieties for trial and propagation in Kenya.

The initiative was named the Tree Biotechnology Programme (TBP), under which country projects were subsequently rolled out in Uganda and Tanzania. The transfer of clonal testing and propagation technology to Uganda and Tanzania was not specifically focussed on fuel-wood production, as had been the original objective in Kenya, but also considered additional end uses such as poles and other timber products.

Objectives of the TBP

The overall objectives of the TBP were to demonstrate how transfer of genetically improved planting material could:

- Enhance the viability of sustainable forestry enterprises;
- Create opportunities for poverty alleviation and social and economic uplift among resource poor farmers, and
- By meeting demand for fuel-wood, and other timber products, reduce the pressure on natural forests.

Given these objectives, the original criteria used by Mondi to select varieties for trial in the East African context included

high densities, fast growth rates, drought tolerance, and ability to grow well in marginal areas.

Testing suitability to the agro-ecological zones of Uganda

In each country, trials were established in collaboration with the national forestry research institutions (KEFRI, NAFORRI and TAFORI). The purpose of these trials was to test the suitability of the various pure and hybrid eucalyptus varieties sourced from Mondi, to the different agro-ecological zones found across Kenya, Uganda and Tanzania.

In Uganda, NAFFORI established trials at 15 different sites, in 12 agro-ecological zones from 2002-2003. Based on the survival rates and average volumes attained between the ages of 41-54 months, four *E.grandis* x *E.camaldulesis* hybrids, and four *E.grandis* X *E.urophylla* hybrids were selected for potential plantation development¹.

Clonal nursery facilities were established for the production of these selected varieties, with the objective of making

them available for small-scale tree growers, and mid-large scale commercial forestry enterprises. In Uganda, these nurseries are operated by Uganda Tree Resources Ltd.

Testing of timber qualities: results from Kenya

In Kenya, where the trials were established between 1998 and 2002, additional analysis was undertaken to understand the timber qualities of the Eucalyptus clones compared to local land races². The results of these tests can be summarised as follows:



Clonal Eucalyptus cutting

¹J.S. Epila-Otara et al. 2009. Selection and site matching of Eucalyptus clones in Uganda. Journal of East African Natural Resources Management. Vol (3) 237-248.

²M.O. Muga et al. 2009. Variation in wood properties of Eucalyptus hybrid clones and local landraces grown in Kenya. Journal of East African Natural Resources Management. Vol (3) 272-282.

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An impressive 34 months old clonal forest in Mayuge

shrinking. This can in turn lead to warping and even splitting. The results found the eucalyptus clones had lower or similar volumetric shrinkage compared with local landraces of *Eucalyptus*.



- **Calorific value** – the higher the calorific value, the greater the suitability for purposes of wood-fuel or charcoal. The results found the calorific values of hybrids were relatively higher than those of mature *Acacia mearnsii* and *A.melanoxylon*, and similar to that of local landraces of *Eucalyptus*.

The results from timber quality testing in Kenya are encouraging. They highlight the comparative advantages of the clonal varieties versus local landraces of *Eucalyptus* in terms of suitability for a variety of end products. The results also show that tree breeding and improvement research contributes to higher productivity and wood quality, and ultimately enhances sustainable forest management. Naturally, the advantage of using improved planting material can only be realised if recommendations as to the optimal silvicultural practices in establishment, management and harvesting stages, are followed by growers.

Plans for further testing in Uganda

There is a need to carry out equivalent testing to validate these results in the Ugandan context. This can help inform tree growers as to the most appropriate end use of the introduced hybrids, and inform locally specific guidelines on silvicultural techniques.

Plans are being developed to initiate this research in the next few months. The results will be disseminated accordingly to SPGS beneficiaries and the wider Ugandan forestry community.

For more information hybrid eucalyptus varieties in Uganda, please contact:

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- **Moisture content and density** – moisture content is important when wood is purchased on weight. High density is associated with higher wood strength properties. The results showed the hybrid clones to have the same or higher densities than local landraces. In addition they had the same or lower moisture content than the local land races grown under similar conditions. Butt logs tended to have higher moisture content than logs from the middle and top of the trees in most clonal varieties.

- **Mechanical properties** – this refers to resistance to imposed loads or forces. This is most important when used for structural building applications such as power line transmission poles, floor joists, wood frame housing etc. The results showed the clones to be the same or higher in stiffness (MOE) and bending strength (MOR) compared to local landraces of *Eucalyptus*.

- **Shrinkage** – when wood dries, loss of bound water causes



SPGS Niche in Uganda's Forestry Industry

By B. D. Sande (SPGS Project Manager)

The Sawlog Production Grant Scheme (SPGS) was formed not to plant trees. Everybody, led by the National Forestry Authority (NEA) was planting trees. However, no one was growing trees!!! As per dictionary, planting mainly refers to "fixing" trees in the soil while growing includes "developing" and managing the trees that are planted. SPGS supports more than just fixing trees in the soil – we support the growing of plantations. Most forestry sector people know this already.

The History of SPGS

The existence of SPGS stems from the 2003 Forestry Policy and the National Forestry and Tree Planting Act where the Government of Uganda committed itself to:

- Reduce public involvement in commercial forest plantations investment
- Support the private sector to invest in commercial timber plantations

The National Tree Planting Act (2003) provides for the establishment of a "Tree Fund", to "finance tree growing of a commercial and non-commercial nature" but on scale and to high quality standards. The SPGS project has piloted the Fund and has, so far, proved

successful beyond doubt.

By 2001 Uganda was running out of timber plantations as manifested through: -

- Only 6,000ha were estimated to be remaining in CFRs
- The above had reduced to 3,500 by 2004
- There was unprecedented and increasing pressure on natural forests for timber
- Uganda needed to establish about 6,000ha per year for the next 15-20 years to produce sufficient sawlogs to fill in the gap
- No one was supporting establishment of timber plantations by the private sector

Therefore, to conserve the rich biodiversity in natural forests, SPGS works to:-

- quickly establish relatively large areas of sawlog plantations
- Pilot a Plantation Development Fund (PDF) to support establishment of high quality, high yielding Compensatory timber Plantations
- provide start-up capital to non-state investors to leverage investment finance into the forestry sector

- Partner with local communities and institutions as a poverty reduction activity in line with PEAP

SPGS Timeline

- Phase I: 2004 - 2009 – With funding support from EU (major support) + GoU
- Phase II: 2009 - 2013 – With support from EU, Government of Norway (GoN) and GoU
- Phase III: 2015 – 2020 – (Currently being planned with donor support)

SPGS at present

Currently SPGS is fully staffed with a total of 23 Ugandan nationals and 2 expatriate Technical Advisors. There has been a process of restructuring resulting in 5 new staff being recruited. The current staffing is according to the current funding phase and budgets. The current Phase II funding to SPGS from both EU and GoN is supposed to end in December 2013.

SPGS in the future

Figure 1 shows the funding status currently and into 2015. It also clearly shows areas of funding, funded activities, as well as the funding gap that is expected during 2014.



Figure 1: Funding status

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from p.30

The Figure above clearly illustrates that the current EU EDF 10 is set to start closure proceedings during January 2014. An application is being prepared for EDF 11 which is expected to be in place by 2015. This “Phase 3” of SPGS and its format, shall be determined by a Value Chain study where the EU shall confirm the most appropriate manner of intervention.

The Project is currently in discussions with the Government of Norway (GoN) regarding extending the existing funding into 2014 to partially cover the funding gap and essentially maintain the status of SPGS while Phase III applications are prepared and processed.

SPGS is currently drawing up the plan for 2014 and the plan focuses on the following: -

- Continue to technically support existing clients on commercial tree plantations;
- Honour 2nd and 3rd grant payments as per contracts;
- Focus on staff development in line with the changing forestry sector landscape in Uganda;
- Dedicate quality time to supporting the preparation for the potential 3rd phase of SPGS; and
- Work closely with Government to implement the Tree Fund as provided for in the act.

The project shall shortly present a request to the Ministry of Water and Environment, for assistance in securing bridge funding for the period of 2014 to allow for continued establishment of plantations.



Note that the 3rd phase of SPGS will largely depend on findings of a study on the Forestry Value-Chain Approach. This study is expected to start around November 2013 and should deliver its recommendations latest by March 2014. The structure of phase III will highly depend on recommendations from this study.

The SPGS Community & Woodlot Support

by Edith Nakayiza (SPGS Plantation Officer)



Community members undergoing a training in thinning plantations.

As the effects of timber and fuel-wood scarcity, climate change and deforestation start to bite in various areas of the country, a good number of Ugandans are rising up to the challenge. The small scale land owners did not leave the task to only large scale tree farmers. They also joined the noble cause of tree planting by benefiting from the SPGS community and woodlot support. As a result, this year has registered such an overwhelming number of groups, individuals and institutions interested in both the community and woodlot supports. Unfortunately due to a limited resource envelope, we have had to disappoint many. Only a total supply of 280,000 tree seedlings and 280 hectares of woodlots were

established for over 50 institutions and individuals from 35 districts of the country.

This year has also seen a number of exciting events manifest, for instance; the community exchange study tour in south western Uganda; (involved over 10 community groups from central, south western and eastern regions visiting Kamusiime Memorial Association plantation site in Bushenyi district); training of trainers in Lira, (the first of its kind in northern Uganda that involved over 30 community leaders from northern districts of the country being trained in tree establishment and maintenance skills) and lastly, the award of Muzira-Mukundane community (a group which has planted over 50 hectares of trees on the bare hills of Sheema district), the best community planting group 2013 during the recently concluded SPGS commercial seminar at Sheraton hotel, Kampala.

As the second phase the project approaches closure, the community and woodlot support boasts of supporting over 160 community groups to plant close to 4.5 million trees in about 50 districts, and also establishment of approximately 1000 hectares of woodlots for 145 beneficiaries in 30 districts of the country. However a number of challenges, for example; the long dry spells, fires, pests and animal attacks have affected the survival/stocking of many of these establishments.

As a project we are very grateful to all our community and woodlot partners that have worked tirelessly with us since the start of this phase. We are actively lobbying additional funds to resume seedling supply next year. But as we do so we urge our old clients to keep maintaining their plantations from weeds, fire and animals. For more information please visit our offices or website on www.sawlog.ug

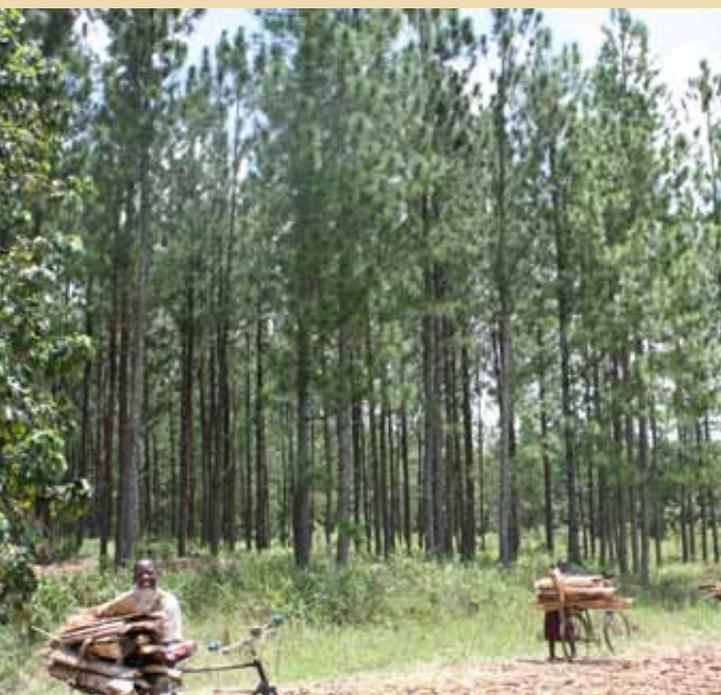
The goal of SPGS is to support rural incomes through commercial tree planting by the private sector throughout Uganda. The purpose is to bridge the supply gap of wood products by increasing the production of high quality wood products.



Well managed, commercial forest plantations have the potential to contribute to the national GDP, and reduce dependency on imported timber.



Through capturing carbon naturally, trees significantly contribute to the mitigation of impacts of climate change



Over 90% of Ugandan's depend on Wood fuel for their basic energy needs. SPGS in the near future hopes to support establishment of fuelwood plantations.



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