

# SAWLOG PRODUCTION GRANT SCHEME



NEWS OF UGANDA'S COMMERCIAL TREE PLANTING FUND FOR THE PRIVATE SECTOR

NO. 16 JULY - AUGUST 2007



➤ **FOREST INVESTMENT IN UGANDA:  
Opportunities and Challenges**



## SEED UPDATE

It has been a busy period with regard to seed procurement and hopefully growers have (or will have very soon) their requirements for the forthcoming planting season\*.

**P. caribaea:** The NTSC now has in stock 150 kg of Brazilian PCH seed and it's going at Ush 875,000/kg. Each kilo is expected to yield 20,000 seedlings. Another batch of 200 kg is expected at the end of June 2007. The NTSC also has 50 kg of Australian PCH seed available at a cost of ca. Ush 2.3 M per kg. The Australian PCH seed should yield 35,000 seedlings per kg. The special order of 52 kg PCH from FPQ for SPGS clients is also expected late June for those who ordered with us: more is expected to be available soon but we are now planning to pass this mantle onto UTGA.

**E. grandis:** NTSC has 100 kg of Fort Portal EG seed at Ush 90,000 per kg. This seed is collected from some excellent mother trees at the Toro Botanical Gardens and is approved by the SPGS (NB. this is the only local EG seed approved for our clients). The NTSC has already sold out of the South African seed but will be raising 150,000 seedlings from this seed available for purchase for late 2007 planting.

The SPGS has recently been offered some selected EG seed from some of Mondi's thinned timber stands in South Africa: this

should be of excellent quality and as we go to press, it is being cleaned and tested in South Africa.

**Attention!** Two issues that keep cropping up on our travels:

- ☺ If you do not want to be disappointed, order your seedlings 6 months in advance from our recommended nurseries and pay a deposit (recommended 30%).
- ☹ Why do some of you accept such poor quality seedlings from some nurseries? Standards will only improve if growers start rejecting some of the poor trees we have recently seen planted out.

\* NB: For our new readers – let us help you with the secret code: PCH is *Pinus caribaea* var. *hondurensis* – the principle species being grown for timber in Uganda.

FPQ is Forestry Plantations Queensland, Australia – who has established seed orchards with PCH, specially selected for quality and fast growth: undoubtedly the best PCH seed available.

NTSC – the National Tree Seed Centre, Namanve (on the Jinja Road just outside Kampala).

Contact Stephen Kaukha (NTSC Manager) on 0772 561 227.

## OVER TO YOU.....

**This column continues to share readers' comments – so keep them coming in and when we think they will benefit a wider audience, we will publish them here.**

**Bob Plumptre** is a name that will be well known to the older (or should we say, more mature?) foresters in Uganda. Bob worked in the Ugandan Forest Dept. for many years from 1957: his last position was as Senior Utilisation Officer. Since retiring, Bob has always followed with interest the goings on here, especially with his son, Andy, based in Kampala with the Wildlife Conservation Society. Here is an extract from a recent Email from Bob:

*"Many thanks for sending me the latest Newsletter: I have printed it out and read it from start to finish. I think it is great that there is so much interest and so much is being planted. Well done!*

*One of the things we looked at in Wood Structure at the Oxford Forestry Institute was the effect of pruning P. caribaea to get more even wood density from pith to bark in the lower logs of the tree.*

*Juvenile wood can be half the bending strength of the wood near the bark in 15-20 year old trees and pruning has a pronounced effect on increasing density and strength in the pruned zone below the crown.*

*Pruning to 3/5ths height seems not to affect growth appreciably in young trees and we reckoned it was worth starting to prune to this height when trees got to three metres or slightly more in height. Although the rings are narrower, the stem becomes less tapered - so the slight loss of volume is compensated for by a more cylindrical stem. The pruning gives you a smaller knotty core as well as a much narrower and lower density core zone. Might be worth trying?"*

We also had some interesting feedback from those who attended the May meeting in Hoima:

*"A well organized and highly informative field visit and meeting" (Eng. Ephraim Kisembo).*

*"Wonderful: a very educational and informative trip" (Robert Mbabazize).*

*"Good efforts but more linkages needed with District Forest Service for planting in Districts" (Patrick Kariuki, Kenya Forest Service).*

*"This is my 1st SPGS activity attended and it has been great. I have learnt a lot: thanks to SPGS" (Rose Ngyanabo).*

*"Always a pleasure to be on the educational trips and be part of the big SPGS family" (Fred Babweteera).*

The final word is from the project's philosopher, **Sekyewa Mohammed:** **"We have a long way to go but we shall get there".**

Read about the safari on Page 6. Others requested more information on cash flow management, planting with AquaSorb and planters' case studies. We will do just that in the coming few months – Ed.

### Cover Photo:

**Brenda Mwebaze (Kamusiime Association) admiring their excellent pine planting in Bushenyi: Just one of the many Ugandans investing in commercial forestry since 2003.**

# SPGS NEWS



By Allan Amumpe & Paul Jacovelli

It has certainly been a busy period since the last Newsletter hit the streets, with many site visits to 'new' planters, a Clients' meeting with a record attendance, a training course run in Jinja for the first time, the 2007/08 budget to prepare and then we are asked by the government to advise on investment in commercial forestry in Uganda. Let us start with the last point first.

as well as lobbying from the private growers and relevant institutions. The 4-page centre-spread in this Newsletter contains the main points raised in the Briefing Note we prepared: as always your feedback would be very welcome, especially on such important issues that affect all of us in the forestry sector here in Uganda. You can read in the special feature that this country still has an awful long way to go to achieve its basic target of 70,000 ha of commercial plantations. In order to keep the momentum started by the private sector planters supported by the SPGS going, it needs your support - and a lot of lobbying in the right circles too.

all about the safari on Page 6. The formal meeting the next day also raised many points: the presentations by the Acting Head of Kenya's Forest Service, David Mbugua, and the illustrated talks on the recent SPGS Southern African safaris (by Florence Nangendo and Sarah Nassuuna), created much debate. If you are a contracted SPGS client, please don't miss the next one - scheduled for 5-6<sup>th</sup> Sept. 2007 (details to be confirmed).

## 2nd National Plantation Seminar:

We are planning to hold a follow-up to last years inaugural (and highly successful) National Plantation Seminar which took place in June 2006 at the Sheraton Hotel. For the 1st time this meeting brought together many people (other than the usual faces from within the forest sector) who need to hear about what is happening in terms of investment and the problems being encountered too. We don't have a definite date yet but are hoping for around 27<sup>th</sup> Sept. 2007. Unfortunately we cannot invite all the private planters connected to the SPGS but suggest that you go through UTGA who we will offer a limited number of invites to (see Page 4).

## Finland:

We have just heard that we have been offered two places for our young graduate staff on a 3-week course entitled - Industrial Forestry Plantations, being held in Helsinki, Finland during August 2007. It really sounds like a brilliant opportunity, with many plantation specialists from around the world giving presentations. Celia and Zainabu (girl power!) have been chosen to go. Thanks to the Finnish government (and Antti Erkkila in Nairobi) for the offer of funding and we look forward to some useful feedback from our SPGS ladies.



Some of the more glamorous trainees from the SPGS training course run near Jinja in late May 2007 (we do also train men): l to rt - Winnie Bulyaba (Busoga Forestry Co.), Sylvia Tushemerierwe (CBM Forestry Plantations) and Sarah Swaleh (James Finlay (U) Ltd.).

## Investment in Commercial Forestry:

The SPGS was requested to contribute to preparing a background paper for the forest industry, which has been selected as one of three topics for discussion at the Presidential round-table investors' meetings, held every 6 months. It is undoubtedly a good sign that forestry investment has been chosen (recognition at last?) but solving some of the problems raised needs a combination of better support and commitment from government

## Phase II Progress - good but...:

Up to end-May 2007, 1,637 ha of new planting (32% of the target of 5,000ha) had received a 1st SPGS payment - 18% of which (309ha) had also received a 2nd SPGS payment. Some 41 clients have at least received some payment from the Scheme but that means that 25 (37% of contracted clients) have not. We know that some of the planters have good reason (e.g. concentrating on maintenance of recently planted crops) but it does put a lot of pressure to achieve the targets in just two remaining planting seasons - up to mid-2008.

## Clients' Meeting:

Our 3rd Clients' Meeting (under the new Phase) was really excellent: read



## WORKING TOGETHER

**D**r. Florence Nangendo, who went with the SPGS to South Africa and Swaziland earlier in 2007, had some interesting observations on the NCT Forestry Cooperative Ltd. Florence's group heard about this organisation from William Davidson, who runs a 400 hectare tree farm in Kwambonambi in Kwa-Zulu Natal.

"What I liked was the arrangement of the smallholders who have formed an association where they are shareholders not just members. This helps them in marketing, so you do not market your trees as Mr. A, but as an association: that way a good price and market is guaranteed. This is the dream I have for the Uganda Timber Growers Association - to find and organize a market for us and negotiate good prices. In fact UTGA has the potential for establishing a mill of some sort to add value to our trees for better market and utilization."

NCT started in 1948 representing 28 timber growers in Natal, covering some 8,000 ha of plantations. The growers were all having problems trying to negotiate the sale of their timber. Shares were issued, based on the area of each member. From these humble beginnings, NCT members' plantations now cover 200,000 ha and they negotiate lucrative export deals on behalf of their members.

Which leads us nicely into the next feature.....



*William Davidson Jr. from Zenith Estates, Kwambonambi, describing their E. grandis clear felling operation with the SPGS visitors in March 2007. All the wood is destined for pulp and is marketed by NCT.*

## UTGA: A Fast-Growing Organisation



As their brand new logo demonstrates well, UTGA are going places. Here are some of the highlights of the past few months since they were launched:

- 22 paid-up members (with many more promising according to their Secretary).
- Elections held; a Work Programme and budget drawn up; sub-committees formed for Training, Advocacy, Procurement and Environment.
- Requested to contribute to the forthcoming Presidential Investors' Round-table meeting.
- Support from the SPGS with regard to setting up a commercial tree seed fund for members.
- Invited to meet the Uganda Export Promotion Centre to present the case for timber producers.
- Invited to represent private growers for a study tour (with visiting experts from University of Pretoria) in August 2007, looking at the problem of Blue Gum Chalcid, the pest attacking *Eucalyptus* trees around the country.
- Also invited to contribute to a forthcoming study investigating the possibility of a group Certification scheme, which is closely related to sourcing additional funds from Carbon and other sources to continue support to private timbers growers in Uganda.

**Have you joined yet? And if not, why not?** UTGA are fast becoming the mouthpiece for commercial private growers in Uganda. If you are not a member, we at the SPGS strongly urge you to put that right as soon as possible. For further details, contact UTGA's Chairman Jossy Byamah on 0772 471 164; or the Secretary, Sheila Kawamara-Mishambi on 0772 403 120.

# HOW DO YOU EAT AN ELEPHANT?

## Contracting in Southern Africa

By Kai Windhorst (*Unique Forestry Consultants*).

**A** comparison of Ugandan and Southern African forestry practices shows the difference time makes. Southern Africa has seen 100 years of development in plantation forestry and part of this development is the forest contracting industry. The suppliers of establishment, maintenance and harvesting services to growers or estate owners have developed out of and alongside the big companies like Mondi and Sappi.

The big move towards contracting started around the 1980's, when the big forest enterprises outsourced their workforce to stand alone companies. This move to outsourcing was due partly to collective actions of the strong (militant) labour unions that disrupted operations. The change was further driven in the 1990's by the shift to black economic empowerment in South Africa. In the forestry sector this led to the phenomenon (and problem) of a forester having to become a businessman almost overnight.

The move 'offloaded' many workers into contracting which in theory reduced the risks involved for the large enterprises. The shift has not been without its problems for both sides. The contract workers were initially trained by the big companies so they knew the standards expected. The contracts are signed according to best practice manuals that would be like adding in the contracts in Uganda that the contractor must adhere to SPGS standards or else there would be a contractual punishment (i.e. no payment).

What makes a contractor successful? Just like any other business it is the managerial and administrative skills of planning, accounting and controlling. The silvicultural skills to adhere to the contract are a logical prerogative. In Uganda there are no forestry contractors: here we deal with labour brokers who can mobilize workers, but they are seldom qualified to be managers and administrators of contracting companies. The main difference that makes a contractor is in the training component: the skills required

for silvicultural contracting in the local workforce will not fall from heaven.

In Southern Africa, the forest contracting sector struggles with contractors that fall into the temptation to grow big too fast and therefore end up under bankruptcy law. In Uganda there is no risk of this phenomenon as there is no contractor in this field to speak of but aspiring contractors should note how much they can do with their given workforce and not overstretch.

The private forestry sector and especially the estate owners and private growers will have to groom the contractors themselves, clarify standards to aspiring labour brokers who want to be contractors. We should start with proper communication of targets and quality expectations. We should also set transparent planning and control mechanisms. This should be done with the idea of building a strategic alliance between contractor and grower, which is mutually beneficial. The contractor has stability of income; the grower reduces the hassle of dealing with labour issues.

This alliance is only possible if we look at open book practices, the grower must know the contractors costs, through own experience and the contractor must know the grower's planning targets and cash flows. We are talking about trust here: mutual trust inscribed in long term contracts to develop the plantations.

A good example is the relation between Global Forest Products (GFP) in Sabie and its Pruning and Maintenance contractors TFS. The contractors are all former employees of Mondi, who sold to GFP in 2001. GFP gave 5-year contracts to establish a strategic partnership to improve the efficiency of the contractors and to make sure they can get bank loans.

GFP made clear though that the contractors have to be legally compliant which means they will have to have an accident and injury fund, be a registered taxpayer and have their accounting audited. The practice of hiring and firing contractors has had a negative impact on quality they said. The contractor would lay off his



*One of Global Forest Products' Contractor teams carrying out high pruning on *P. patula* in Sabie, Mpulalanga.*

workers and would have to retrain them on a new contract - a practice that reduces the profitability of contracting.

GFP's 5-year contract period was designed to enhance the sustainability of contract relations. Within the contract there are performance and efficiency based incentives. There are also warning and last notice procedures if the contractor does not comply with rules and regulations. For an average maintenance contract the contractor would receive 1000 Rand/ha/year (Ushs280,000). This contract comprises all necessary operations within this year from repeated slashing to spraying: the target being 'weed free stands'. The grower must periodically check whether there are weeds and act accordingly, giving a warning or an OK to the contractor. The money is given as a loan upfront, which forces the contractor to calculate and work very well else they will face bankruptcy. The recommendation from GFP was clear: train your contractors properly and constantly.

Oh yes – back to the question raised in this article's title (how do you eat an elephant?): of course you can't swallow him whole in one day - you eat him bit by bit, slowly. Like contracting – we have a long way to go in Uganda but we shall get there. And together shall be faster than alone.



## AND SO TO HOIMA.....

By Paul Jacovelli

**T**he chaos of the Kampala rush-hour and the early morning rains were all forgotten as the SPGS convoy arrived at Kikonda Forest Reserve, some 30 kms south of Hoima on 16<sup>th</sup> May 2007. Why Hoima you ask? Well there are many private growers starting in the business of growing trees around there and we thought it was a good opportunity to learn something from one of the larger (and successful) clients, namely, Global Woods Ltd. (GW) who has been planting since 2003 under the SPGS.

As the sun threatened to break out, Allan welcomed everybody for the third safari under the new phase of the Scheme. And what a turn-out there was - with over 70 people including even the Bishop of Hoima and the local MP! It was fitting that we visited GW since they had recently won the prize for the best planters of 2006. They successfully established 500 ha under the 1<sup>st</sup> phase of the SPGS (2003-2006) and have already planted a further 200 ha to the required standards since late 2006.

When asked about the hard lessons learnt that they would pass on to new planters, they were very honest and emphasized –

- the importance of careful site-species matching: they originally planted both eucalypts (*E. grandis*) and Musizi (*Maesopsis emini*) on poor sites more suited to pines (especially *P. caribaea* var. *hondurensis* - PCH). They have since replanted these areas to PCH.
- the need for forward planning and careful timing of operations is essential when planting on a commercial scale they said.

In GW's nursery, the SPGS's Alex drew attention to the poor handling most seedlings are subjected to before they are planted. He demonstrated how the use of stackable 'lug-boxes' or crates would greatly increase the survival of newly planted trees (see SPGS News No. 15 for details – Ed.). Then it was over to Bric who discussed pruning and thinning whilst standing in the first plantation to receive the new SPGS grant for such operations – an excellent 4-year old PCH stand.

Unsurprisingly, it was thinning that stimulated much debate and the usual cries could be heard - "how can you waste such nice trees?" and "it would hurt to cut out trees from my own planting". The SPGS team quickly dispelled such concerns by telling growers clearly how crucial thinning was to produce large sawlogs as quickly as possible.

Leaving many stems in a plantation results in lots of small diameter trees, whereas thinning in stages (as prescribed in SPGS Guideline No. 26) encourages the best trees to grow to a larger size: the result is a high value plantation. Even if there is no market for the small trees cut from the 1<sup>st</sup> thinning, it must be carried out: thinning 'to waste' is common in commercial forestry (although of course it is better if one could sell the material). It is usually easier to market 2<sup>nd</sup> and later thinnings as the trees are bigger.

After demolishing lunch everyone headed onto Corewoods Ltd., who is planting in Bujawe Forest Reserve, some 20 kms north of Hoima. One of Corewoods partners, Fred Babweteera explained the challenges they had faced, particularly from massive weed growth. It was clear that they had problems



"Now if you had weeded better the trees would have been this high": the SPGS TA's (Paul and Bric) with the Clients in Corewoods' 2006 PCH planting near Hoima in May 2007.

with the timing of pre-plant spraying and maybe poor supervision (or training?) of the spraying teams. The demonstration of post-plant spraying showed everyone though that they are now taking the weed control more seriously. Finally, Bric gave a demonstration of AquaSorb, the water absorbing powder that is widely used in Southern Africa to extend the period for planting.

As everyone gathered in Hoima for the evening - disaster struck: the hotel bar ran out of cold beers (admittedly this was not a crisis for all SPGS clients)! Still, seeing everyone sharing stories from the day, I couldn't help ponder that these field meetings have become an excellent way of learning about the business of commercial forestry: the enthusiasm shown by the participants makes all the hard work preparing for them worthwhile. "Seeing is believing" is oft quoted here and it is obviously true. What is particularly valuable is the planters sharing their experiences – both good and bad – whilst standing amidst the trees rather than in a classroom situation.

Our thanks go to Global Woods (Shedrack, Johannes, Kai and the team) and Corewoods (Fred and Denis) for their cooperation and indeed to all who attended and generously shared experiences with each other. We also appreciated the presence of the Kenyan delegation, who contributed immensely to the meeting. With the fantastic efforts of the private growers over the past few years, at last the forest sector in Uganda has something it can proudly show off to others!

# PHOTO GALLERY - I

## SPGS Clients' Safari To Hoima



*The crowds came from miles around when the SPGS convoy rolled in: Corewoods' staff demonstrating one method of post-plant spraying with Glyphosate – using boards to protect the trees from spray drift. Training and supervision are the keys to success.*

*A Kenyan invasion - but a welcome one! The 8-person mission from over the border turned this SPGS Clients' meeting into the 1st regional SPGS meet. "Learn from each other" remains our motto.*



*Johannes Mokwena (Global Woods, Kikonda) explaining to the assembled SPGS Clients, how they carried out their recent 1<sup>st</sup> (access) prune to 2 m and a 1<sup>st</sup> thinning to 750 stems per ha.*



# PHOTO GALLERY - II - SPGS Plantation Planning & Establishment Training Course - Jinja May 2007



*Charles lecturing trainees about weed identification in Nileply's Nsube plantation.*



*Finally, a group shot from the final day of the May course (we couldn't find any trees for a nice background!).*



*Participants listen to Zainabu during the course. These courses are a very important way for field staff to learn the techniques of cost-effective establishment. The next course is early August – see back page.*



*Learning how to calibrate for successful herbicide application during the course.*



*The SPGS's Thaddeus trying to keep the trainees in line as they practice lining out and pitting during the recent course.*

# FORESTRY INVESTMENT IN UGANDA: OPPORTUNITIES & CHALLENGES.



## 1. WHY ARE NATURAL FORESTS IMPORTANT?

Forests provide a wealth of indirect benefits as well as direct use benefits to many of the people surrounding them. Uganda's natural forests are important for many reasons, including:

- **Energy source:** The natural forests (especially the woodlands) are a vital source of fuelwood (firewood and charcoal) for over 90% of Ugandans that depend on them for their cooking and heating requirements.
- **Climate regulation:** The crucial role of forests in climate regulation has recently come to the fore, with global warming affecting everyone on the planet but its impact will be more serious on the poor who have no alternatives. Trees absorb carbon dioxide (CO<sub>2</sub>) from the atmosphere: clearing and burning forests releases this CO<sub>2</sub>. Deforestation accounts for up to 20% of the global greenhouse gas emissions that contribute to global warming – second only to the burning of fossil fuels.
- **Water and soil conservation:** Forests play an important role in watershed protection, protecting soils from erosion and also releasing water slowly into river (or lake) catchments.
- **Biodiversity:** Uganda has forests with an incredible diversity of wildlife and plant-life, including endemic species (i.e. not found elsewhere) and threatened primates.
- **Livelihoods:** Uganda's natural forests are a valuable source of food, herbs and medicines (some yet to be discovered) – for the many people living nearby.
- **Tourism:** natural forests attract tourists - particularly intact, mature forests with high biodiversity, which is the case for many of Uganda's remaining forests in the Albertine rift 'hot-spot'.



*The fate of many of Uganda's natural forests (especially those under private ownership) – cleared for charcoal (or agriculture).*

A study carried out in Uganda in 2004 by the Wildlife Conservation Society estimated that the true economic value (including all marketable and non-marketable values) of Uganda's natural forests was approximately US\$593B, roughly equivalent to 5.2% in GDP terms (NB. This report - *The Value of Uganda's Forests: A Livelihoods & Ecosystems Approach* is available from the SPGS).

## 2. WHY ARE UGANDA'S NATURAL FORESTS THREATENED?

As anyone who travels out from Kampala will know, Uganda's remaining natural forests are under immense pressure from various quarters. A key indicator is the per capita forest cover in Uganda, which, from 0.3 hectares per person in 1991, is predicted to be as low as 0.1 ha/person by 2025 if current trends continue. Forests are being cleared for the following reasons in Uganda:

- Increased population pressure with a heavy dependence on fuelwood and subsistence agriculture.
- Pressure on land for commercial agriculture – especially oil palm, sugar cane, tea and tobacco – all crops require the conditions where tropical high forests naturally occupy.
- Uganda's economy has shown good growth for a number of years: this creates a substantial demand for timber and wood products.
- Poor control by relevant authorities to stop deforestation.
- The lack of a strategic plantation resource to provide wood and wood products.

## 3. WHAT ARE THE RELEVANT AUTHORITIES DOING ABOUT DEFORESTATION?

Despite a major sector reform process (and a new Forest Act in 2003), the relevant forest authorities have struggled to stop the deforestation, which is particularly rampant on the 70% of the forests on private land (i.e. not officially 'protected' by NFA or UWA). The District Forest Service (DFS) is under-funded and poorly organised and has no hope of stemming the tide in its present state. Even in the 'protected' Central Forest Reserves (CFRs) under the control of the NFA, rampant encroachment and recent pressure from government to change the land use of some, does not bode well for the country's remaining forests.

## 4. WHAT IS THE ROLE OF PLANTATIONS?

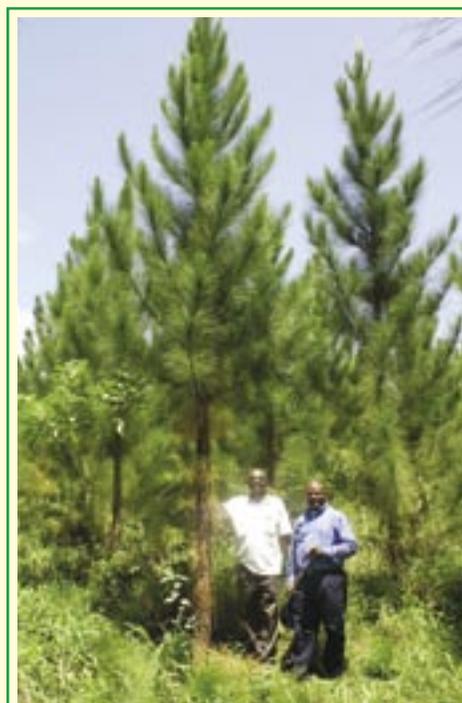
Tree plantations are crucial to supply the country's timber and other wood products requirements and at the same time reduce the pressure on the remaining natural forests. The development of commercial tree plantations also brings many other benefits to a country, provided the development is carefully planned and the forests well managed. The key benefits commercial forestry brings are as follows:

**High yields:** Well-managed tree plantations can yield over 20 times the utilisable timber compared with an equivalent area of natural forest. Tree plantations (dominated by pines and eucalypts) are capable of growing fast and producing high yields of utilisable products (whether it be fuelwood, poles or sawlogs) when properly managed. Trees on farms and other agroforestry systems have their role but large-scale, commercial plantations are essential to provide the bulk of the country's wood requirements, which includes the raw material for wood-using industries.

**Conservation of natural forests:** By producing such high volumes of utilisable products, intensively grown plantations can thus take considerable pressure off natural forests, which generally supply such products in a much more extensive way. This 'compensatory' benefit of plantations will only work, however, with an effective mechanism in place for protecting the natural forest areas. Plantations can never, however, replace natural forests which are often very complex ecosystems: tropical high forests, for example, have many hundreds of species all occupying their own niche.

**Employment:** Plantation development creates many thousands of rural jobs – both directly and indirectly in various support industries. The forestry industry is thus a great way of stemming the flow of migration to cities: it also trains people how to grow trees in cost-effective (i.e. commercial) way and creates many opportunities for entrepreneurs to start up e.g. offering contracting services. Establishing just a minimum of 70,000 hectares of timber plantations in Uganda would create at least 6,000 jobs.

**Economic impact:** apart from rural employment, commercial plantation businesses also become a major source of revenue for government. Being self sustaining in timber would save the country around \$100M a year in foreign exchange. Plantations also supply the raw material for many added-value businesses like industrial utilisation (sawmills and wood-chipping plants) and furniture making. A good example is Swaziland, which is a small country in Southern Africa. Despite not being blessed with Uganda's fertile soils and good rainfall, Swaziland has developed a resource of 135,000 hectares of pine and eucalypt plantations (all by the private sector): the Swazi forest industry now employs 8,000 people and contributes 15% to the country's GDP. The main attraction for private investors into Swaziland from the 1940's onwards was the offer of large areas of land without encumbrances and the desire of the government to support commercial private investment.



*Ponsiano Besesa and Richard Bakojja in front of the latter's impressive 3-yr old Pinus caribaea planting near Mubende. These are just 2 of the many investors being supported by the SPGS since 2003.*

## 5. WHY PLANTATIONS ARE AN ATTRACTIVE INVESTMENT OPPORTUNITY

**Growth rates:** Ugandan plantations can match (or even exceed) some of the best growth rates in the world – as Table 1 shows.

**Table 1. Comparative Plantation Growth Rates**

Country	Area (ha)	Species	Yields* (m <sup>3</sup> /ha/yr)	Main Product(s)
Australia	135,000	<i>Pinus caribaea</i>	20	Sawlogs
	45,000	<i>Araucaria cunn.</i>	15	Veneer logs and sawlogs
Brazil	>4M	<i>Eucalyptus spp.</i>	45	Pulpwood & Charcoal
Malawi	>100,000	<i>Pinus patula</i>	18	Pulp & sawlogs
South Africa	700,000	<i>E. grandis</i>	20	Pulpwood
	600,000	<i>P. patula &amp; elliotii</i>	15	Sawlogs
Swaziland	120,000	<i>P. patula</i>	19	Pulpwood
	30,000	<i>E. grandis</i>	18	Mining timber (+ pulp)
Tanzania	50,000	<i>P. patula</i>	18	Pulp & sawlogs
	20,000	<i>Acacia mearnsii</i>	8-18	Tannin (+ electricity)
	10,000	<i>Tectona grandis</i>	14	Sawlogs
Uganda	12,000	<i>Pinus caribaea</i>	20-35	Sawlogs
	3,000	<i>E. grandis</i>	30-50	Fuelwood; small poles (+ sawlogs)

\* Yields for countries with established plantations are from various published sources; Uganda's yields are based on predictions from experience of SPGS/NFA since 2002: many are yielding less than this due to poor silvicultural practices.

Source: SPGS (2006): Presentation by Paul Jacovelli (CTA) to 1st National Plantation Seminar organised by the SPGS at Sheraton Hotel, Kampala, June 2006.

**Returns:** Timber plantations in Uganda can offer attractive rates of return on one’s investment – in the order of 10-14% (more with well grown Eucalypts). This compares very favourably with many other countries (Table 2). The demand for timber and wood products far exceeds any likely supply scenarios with excellent opportunities to supply sawn timber regionally.

**Table 2. Examples of Returns on Investment in Timber Plantations**

Country	Indicative Returns – Constant prices	Comments
New Zealand, Australia	8 to 8.5%	Stable politically, assured markets
Brazil, Chile, Spain, Turkey	10 to 12%	Often for industrial wood with very short rotations, market cyclical, fair to good stability
UK	3 to 5%	Fair growth rates, politically stable, aim was strategic timber supply, service values now predominate
Germany	0.5 to 1%	Return on established forest compared with liquidation value, maintaining forest cover is enshrined in the constitution
<b>Uganda</b>	<b>10-14%</b>	<b>Assumes an SPGS subsidy</b>

*Source: LTS/SDC (2005): Improving the Investment Environment for Private Sector Plantation Forestry Development in Uganda. A study commissioned by the SPGS.*

**NB.** RoR are highly dependent on the price received for the final product as well as the availability of a subsidy/grant for establishment, which is commonly provided (like the SPGS in Uganda).

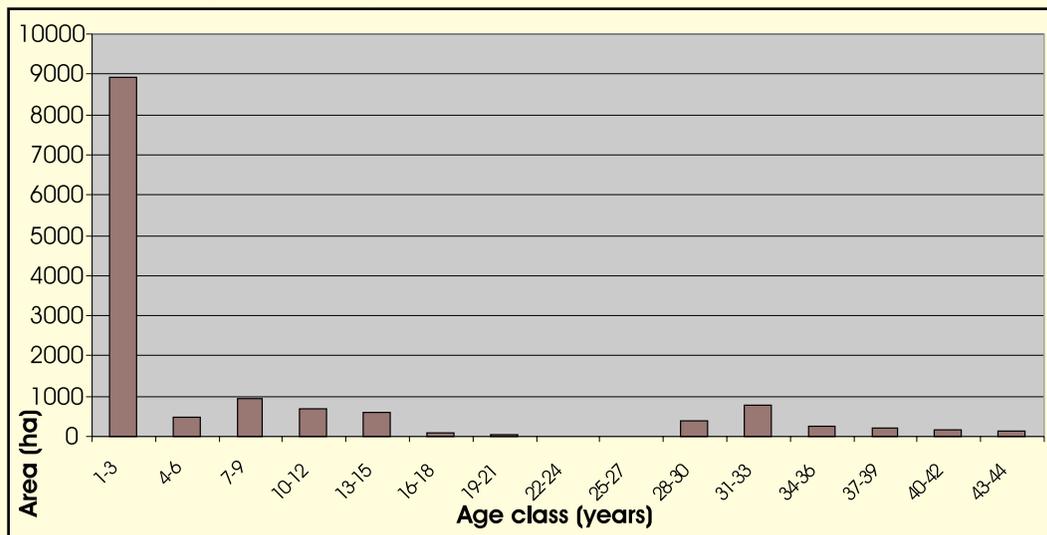
**Funding opportunities:** this is a good time for commercial forestry developments seeking funds: institutional investors are currently investing heavily in forestry, which offers diversification, reduced risk, protection against inflation and is seen as a socially responsible investment. Investment is nearly always tied to international Certification by an independent body (e.g. Forest Stewardship Council) that checks whether the business meets agreed standards - economically, socially and environmentally.

Uganda has the potential to attract major investment funds (including carbon credits) into commercial forestry but the current investment environment must be improved. The start made since 2003 by private planters and the NFA is encouraging but major obstacles are now threatening its expansion.

**6. WHAT IS THE STATUS OF PLANTATIONS IN UGANDA?**

Very worrying is the short answer! A study carried out for the SPGS in 2005 concluded that Uganda needs a minimum of 70,000 hectares of high yielding, tree plantations just to meet its projected internal demand by 2025: this equates roughly to 4,000 ha of new planting per year. Currently Uganda has probably no more than 14,000 ha of timber plantations – 70% of which are under 4 years old. Within a short period (no more than 5 years), the mature crop will be finished and (as Fig. 3 shows clearly) there is then a very worrying ‘hole’ of at least 10 years where there is no mature crop available. Since pines take some 20 years to mature, only faster growing eucalypts can produce timber in this time period and hence they should have an important role in Uganda’s plantation strategy.

**Fig. 3. Area & Age Class of Uganda’s Industrial Plantations 2006 (Source: NFA 2006).**



Private planters have invested in over 7,000ha since 2003, around 70% on CFR land leased from the NFA. The target under the SPGS is 10,000ha by 2009: a few investors (e.g. New Forests Co., Global Woods and Busoga Forestry Co.) have the ability to source external funds, though the vast majority of the private growers depend on the planting subsidy provided by the SPGS. The NFA established around 4,000ha 2004-06 but have since had to virtually cease planting due to financial constraints. Even with the great efforts of the last few years, however, there is a long way to go before Uganda can even meet its own projected timber requirements from dedicated plantations, let alone having a surplus to export.

## 7. SPGS

The SPGS has achieved substantial results in a short time. Since 2003, this innovative project has already subsidised the establishment of almost 7,000 ha of timber plantations to higher standards than has been achieved previously in Uganda. The SPGS's focus is very commercial: it has introduced improved seed and many 'new' techniques to improve yields (and hopefully profits at the end of the day). It has created a huge interest in commercial tree growing in Uganda and has recently started its 2nd Phase (2006-2008). The SPGS only pays out when certain agreed standards have been achieved and only subsidises half of the full cost of establishment (estimated at Ushs1.2M). Given that the SPGS grant is matched with private investor's funds, this is a very cost-effective way for the country to achieve its plantation targets. The funding for the SPGS (currently solely from the EU), however, is not secured beyond the end of 2008. The current scale of the SPGS is around 2,000 ha per year: it would thus have to be scaled up 2 or 3 times to meet the targets discussed in Section 6.

## 8. CONSTRAINTS:

Apart from the uncertain future for the SPGS, there are other important constraints to the expansion of commercial forestry in Uganda:

**LAND:** commercial forestry requires large areas of suitable land in order to achieve economies of scale and reduce distances to market etc. Security of tenure is also very important - whether investors are planting on private or land leased from the NFA. Many of the CFRs now being offered by the NFA for planting by private investors are illegally encroached: some of this occurred during the years of poor control by the UFD leading up to the sector reform process but many incidences are more recent. The NFA is getting no support from government to resolve these issues.

**INFRASTRUCTURE:** the poor state of the rural road network in Uganda is a major constraint to investors in the forestry sector. It is important to have good access to plantation areas – for establishment purposes, for fire protection as the crops develop and particularly to get the logs to market at harvest. Most Districts are doing very little to repair or upgrade their roads, putting the burden on the investor and thereby reducing the profitability of the venture. Government should show a commitment to investing in rural infrastructure in support of the investors in commercial plantations.

**THE FORESTRY TAX ANOMALY:** Forestry is not competing on a level playing field when compared to other land uses. The long timescale between planting and harvesting (between 12-25 years or more) leads to plantation being taxed more heavily than other investments yielding a similar return. There is no income against which to offset the early expenditure and the main income when the trees are harvested is taxed as it were an annual income with no recognition of the years it has taken to accrue.

This anomaly is dealt with in different ways in various countries, mainly through exemptions from, or lower rates of, land, inheritance, input purchase and income taxes. In Uganda this could be rectified by either allowing the costs of replanting to be set against the proceeds from felling of the first crop or exempting plantation forestry from income taxes, as in the UK. A reform of the VAT system should also be undertaken to promote private investment in the sector. (NB. a more detailed study on this issue – *Improving the Investment Environment for Private Sector Forestry Development in Uganda* (2005) by LTS/SDC – is available from the SPGS).

**RESEARCH & DEVELOPMENT & LACK OF SKILLS:** The surge of interest in commercial plantations since 2003 has highlighted the lack of R&D support and also the serious lack of trained staff with knowledge of commercial forestry. This scenario is hardly surprising given that there was virtually no planting for over 30 years in Uganda but the worry is that current institutions have not changed in the last 4-5 years as commercial planting has greatly increased. Many of the intensive silvicultural techniques for commercial forestry have been developed in other countries (e.g. Southern Africa) and it is these that are being introduced into Uganda, particularly by the SPGS and some of the bigger planters. The relevant research and educational institutions need to react to what is happening on the ground and to cater for the needs of the private growers in particular.

## 9. CONCLUSION

Commercial forestry could bring many benefits to Uganda – most especially in terms of rural jobs and supplying the raw material for major industrial development. Intensively grown plantations could also take some pressure off natural forests currently supplying the bulk of the country's wood requirements, though this will only have the desired impact with the NFA and DFS functioning effectively, which is not currently the case.

The private sector has already shown that they are willing and capable of developing commercial plantations, provided the incentives of land free from encroachment, technical support and (for many) financial support during the expensive early phase of plantation establishment, are in place. Government need to give more direct political support to the sector as well as a commitment to resolving both the short-term (e.g. encroachment) and longer-term problems (e.g. fiscal incentives). Without such support, investment in commercial forestry will dry up as quickly as it started.

Efforts need to be made (by government and private growers themselves) to attract funds for both the conservation of natural forests and the expansion of plantations in Uganda: this should include Carbon-funds. The SPGS public-private partnership would be an effective means of supporting commercial plantation development. The Uganda Timber Growers Association (UTGA) also need to quickly mobilise and lobby for support too: both natural forests and commercial plantations are important for Uganda.

# PHOTO GALLERY - III



*The well-managed nursery of New Forests Company Ltd. in Namwasa CFR, near Mubende.*



*Thaddeus explaining to nurserymen why such a big *E. grandis* seedling will struggle when planted out: it already had been attacked by the Chalcid wasp too.*



*Hannington Mulindwa (in Luweero) was the very 1st recipient of seedlings under the SPGS's community support programme in 2005. His PCH are looking good – unlike his older *P. patula* in the background, which is planted on the wrong site.*



*A spraying team at Busoga Forestry Co., in Mayuge, carrying out a post-plant spraying operation in a recently planted pine compartment (May 2007). BFC have planted 130 ha during April/May 2007.*

# PHOTO GALLERY - IV



*Ray Kinsey of Mondi Business Paper (Kwambonambi, South Africa) entertaining the SPGS visitors in March 2007. In the background is an important conservation area (a wetland) within Mondi's estate. The Certification process ensures that such areas are properly protected and managed.*



*The impact of Leptocybe invasa - the Blue Gum Chalcid - on a young Eucalyptus hybrid clone (GC) at Kifu nursery, near Mukono (see Page 19 for details).*



*A superb 11 year old PCH stand in Byfield (Queensland, Australia). (NB. photo courtesy of Ian Last, FPQ). Let us see if we can beat that!*

## ADVICE ANYBODY?



*Peter Karani struggles to get his tape measure around the huge Klinkii pine (*Araucaria hunsteinii*) in Kifu CFR. One of the few trials to escape the serious Lucas outbreak that severely affected Ugandan plantations during the last 15 years.*

### MARKETS:

Want some accurate market information anybody? Of course you do! Way back in 2005 the SPGS commissioned Unique Forestry Consultants to carry out a Value Chain assessment study. Following on from this work we have just commissioned Unique to carry out a new study to look at price fluctuations and volumes in the Kampala timber market. The goal is to devise a monitoring system that can be periodically updated and thereby providing sound market information for growers and timber buyers alike. Kai Windhorst (ex-Global Woods, Kikonda) - is leading the current study but working closely with two of the SPGS staff – Celia and Alex – so that they learn how the system works. The initial work has involved interviewing key timber dealers and establishing contacts in the corridors of URA and UBOS.

### CARBON FUNDS:

Everyone seems to be talking about carbon funds and the SPGS has already solicited interest from both the World Bank's BioCarbon Fund and the voluntary carbon market in Europe. We will shortly be recruiting the services of a consultant who is a specialist in this highly complex field, to recommend the most likely way forward for the SPGS and the private growers here.

### EUCALYPTUS CHALCID:

The so-called Blue Gum Chalcid (BGC), *Leptocybe invasa*, seems to be spreading its range throughout Uganda and Eucalyptus growers are worried (see Page 19 for details of this pest). The South Africans are worried too since Eucalypts are so important to their industry (they have over 500,000ha of commercial *Eucalyptus* plantations). Our communications with people from Mondi and Sappi lead us to FABI - Forest & Agricultural Biotechnology Institute – based in the University of Pretoria. FABI have readily agreed to come to Uganda to carry out a rapid inspection and advise us accordingly. In late July 2007, we hope to escort two FABI scientists to the key *E. grandis* growing areas (Western Uganda and around Jinja). We have already hosted a meeting with interested parties

*Cont. on P. 17*

**W**e have a number of consultancies either ongoing or planned for the next few months - from species trials to certification; from market surveys to carbon funds – there is something to interest everybody. So don't say you didn't know!

### SPECIES RESEARCH:

In advance of the planned SPGS species research with private growers, we requested Mr Forestry, Peter Karani, to trawl through the literature (and his grey matter) and review the research undertaken prior to 2002 (when the FRMCP started) on species and provenance research in Uganda. Most of the story is pretty depressing: excellent work started but a huge loss of information (and of course all the best genetic material converted into planks) during the '70's and '80's. No use crying over spilt milk though! There are definitely things we can learn, however, from the few trials that survived and from what was written up in the days when the Forest Dept. was highly professional and conducting some excellent research work.

### CERTIFICATION:

Certification is an independent verification that the forest management practices conform to internationally agreed standards. These standards cover

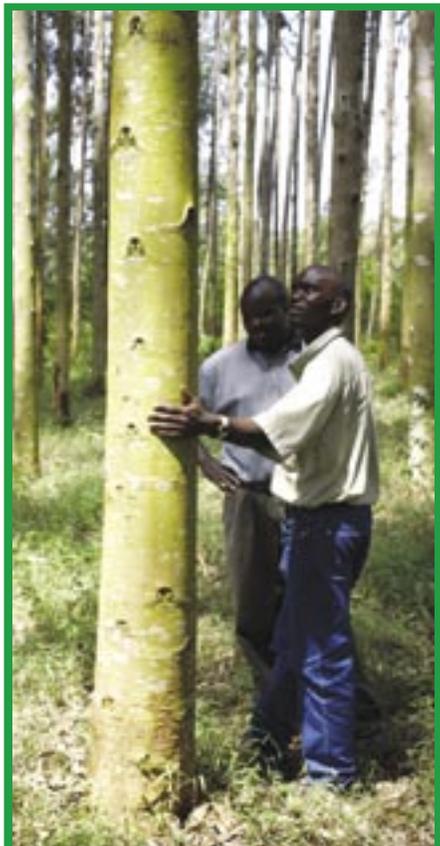
not just sound business practices (e.g. planning, silviculture and administration) but social and environmental aspects too. Certification is driven by a variety of interests. For trade and industry, it is a way of environmental marketing to sell their 'green' goods. For the growers, certification is a tool for gaining market access (or advantage) by attracting price premiums for sustainably produced products.

Whilst the SPGS already has in place certain standards that its contracted 'clients' have to meet before they receive a grant, these still fall short of international standards (e.g. those set by Forest Stewardship Council – FSC – the best known accreditation organisation). Most of the private growers in Uganda are small to medium scale (only 4-5 companies will plant over 1,000 ha in the next 2 years) and it would be prohibitively expensive for these people to individually seek FSC accreditation. Thus we want to investigate the possibility of a group-type certification for growers under the SPGS umbrella. This is the background to the SPGS seeking the assistance of South African-based expertise to advice on the way forward for the private growers in Uganda. We hope to have a 2-man team visiting in mid-July and we will ensure that they visit a sample of the private planters.



# CLONAL FORESTRY: What is all the fuss about?

By Paul Jacovelli



Thaddeus and Charles (SPGS Plantation Officers) admire one of the impressive 5-yr old hybrid *Eucalyptus* clones (we think it is a GC but didn't have the trial design) in one of FORRI's trial plantings around Uganda (in Busoga, Mayuge).

If you read the last SPGS Newsletter (No. 15) – or even just looked at the pictures – you should be aware that the commercial growers down South are all moving towards the use of clones rather than seedlings. In fact this trend is happening all over the world in forestry. So (you might ask) - why is this? And (you might also ask) - why has Uganda lagged behind in adopting clones? I hope to answer both questions in this article.

## What is a clone?

Let us start by ensuring you all understand what a clone is. Clones are plants reproduced vegetatively from a common parent: they thus have an identical genetic make-up (or genotype). Rooted cuttings are the most common form of clones, with branch and stem material being used to produce carbon copies of the parent.

## What are the advantages of clones?

- Increased uniformity (identical genetic make-up or genotype).
- Improved characteristics (e.g. stem form, growth, survival, pest resistance, desirable wood properties etc.).
- Increased yields: clonal planting with hybrid Eucalypts in Brazil has improved dry mass production by 100%; clonal *E. grandis* in Columbia grows 40% faster than seedling plantations.
- Adaptability: clones can be selected for specific sites and climatic conditions: this is especially the case for 'new' hybrids formed by crossing different parent species.
- Mass propagation is possible of clones with desirable traits.
- Overcoming poor seed supply: e.g. with notoriously shy seeders like *Pinus caribaea*.

## And the disadvantages?

- Clones cost typically 2-3 times the price of seedlings: rooted cuttings have higher production costs. In New Zealand the cost of micropropagation of pine cuttings is 5-7 times a seedling.
- Clones have a higher risk of pests and diseases (due to reduced genetic variability).
- Some clones are very site specific (i.e. care has to be taken to match clones with sites).

## Clonal forestry around the world.

There are an increasing number of success stories with clonal forestry in many countries. Aracruz in Brazil is the most famous example, using mostly GU hybrids (i.e. *E. grandis* as the mother, crossed with *E. urophylla* as the father). At Pointe Noire in Congo, spectacular yield gains have also been achieved (average 40m<sup>3</sup>/ha/yr with hybrid *Eucalyptus* clones compared to 12m<sup>3</sup>/ha/yr from the early *E. tereticornis* plantings). South Africa now hardly plant any seedling *Eucalyptus* in the warmer regions of KwaZulu Natal: GU and GC (*E. grandis* x *E. camaldulensis*) hybrids are taking over, largely because of serious fungal

diseases affecting pure *E. grandis*. Forest Plantations Queensland in Australia, now only use hybrid cuttings of *P. elliottii* var. *elliottii* x *P. caribaea* var. *hondurensis* for their large planting programme.

## Clones in Uganda.

FORRI established a series of clonal trials around Uganda in 2002-03. These trials were carried out in conjunction with Gatsby Charitable Foundation (a UK-based charity that are interested in technology transfer to help rural farmers) and Mondi SA, who supplied the clones from their South African breeding programme. Obtaining interim results from these trials has not been easy but we have just managed to get hold of a draft report summarizing 3.5-4.5-yr data, which we will share with you in the next issue. There is no doubt though from just looking at the trials, however, that these hybrid clones (GUs and GCs) have immense potential for Uganda (see photo this page).

These hybrid *Eucalyptus* clones are not available commercially largely because of problems scaling up production at the nursery at Kifu (nr. Mukono). Without proper analysis of the trials, it is also dangerous to be recommending which clones are suited to which sites here. It seems though that things are now progressing, with Uganda Gatsby Trust taking over the Kifu nursery and even starting new clonal nurseries in Fort Portal and Mbale.

One interesting fact I came across as I researched this article was to find out that China has been practicing clonal forestry using rooted cuttings of Chinese Fir, *Cunninghamia lanceolata*, for over 100 years. As someone said, there's nothing new under the sun!

In the next issue I shall follow up this article with more details on why I believe there is rosy future for clones in Uganda and what we at the SPGS are doing to try and accelerate their availability for private growers here.

# TAUNGYA



*By Thaddeus Businge (SPGS Plantation Officer)*

**T**aungya is an establishment technique by which farmers plant tree seedlings and tend them together with agricultural crops. The trees and agricultural crops grow in co-existence for the first two or so years depending on the growth rate of the trees. Once the tree canopy has closed, the crops can no longer be grown among the trees so the crop growers have to vacate the forest land. That is the theory anyway.

Taungya as a forestry establishment system that has its origins in South East Asia where it was introduced by the British colonial masters in a bid to ensure revival of the forest cover following shifting cultivation. It worked well there with huge areas established because it was well supervised and the activities of the farmers closely monitored. If done under careful and adequate supervision, taungya is known to have a number of advantages; it is a cheap method of forest establishment and maintenance, it makes maximum use of the land, it contributes to food security and the leguminous crops if grown with the trees help fix Nitrogen in the soil.

Uganda as always, didn't miss out on the taungya 'fashion'. The system started by planting the indigenous hardwood - Musizi (*Maesopsis eminii*) - to provide shade in cocoa plantations. It later spread to other parts of the country where it was used in the natural regeneration of indigenous species and establishment of softwood plantations. However, the results of practicing taungya in Uganda have not been good. No standards have been put in place and there has not been any supervision leading to the following observations:

- Many crops (including tall ones like maize) are grown too close to the trees so the trees are quickly in competition with the crops for water, nutrients and sunlight.
- Hostility towards the trees by the crop owners, who often damage them so that the trees grow slowly and they can use the land for their crops for longer.
- Neglecting the trees to favour the fast growing agricultural crops.

Because of the above, we at SPGS have made our position clear:

no taungya on any of the SPGS supported plantations. This does not mean, however, that people growing trees should do away with growing food crops. We encourage people to set aside land for tree growing separate from that for agricultural production. Alternatively, land for tree growing can be cultivated at least six months prior to tree planting, thereby saving on land clearance costs.

For those who insist on taungya (but not under SPGS), you can consider growing Musizi, an indigenous hardwood growing well on plantations. This tree can be grown at a wider spacing

than the pines or Eucalypts. Therefore, low, non-climbing plants like beans can be grown in the tree inter-row, at a distance of half a metre from the trees. Always remember that the one metre diameter tree spot should always be kept free of weeds, including agricultural crops.

As SPGS, we are not saying taungya is bad, we are only saying that a lot has to be done before we can consider it as a cost-effective establishment method for commercial timber plantations in Uganda. A good supervision mechanism has to be developed to monitor the activities of the crop growers so as not to harm the trees.

**Editor's note:** *despite the fact that using taungya over many years has been a complete failure in terms of plantation establishment in Uganda, the debate has not gone away since the SPGS started back in 2003. We would like to hear your comments on the issue.*



*This is not the way to achieve fast growth and high stocking of one's tree plantation. This practice – still common in Uganda – is not taungya but agriculture.*

### *from P. 15*

– including James Finlay, New Forest Co., Uganda Gatsby Trust, NaFORRI, Makerere University and UTGA – who we hope will also be involved during the FABI visit. We are planning to hold a round-up meeting in Kampala to hear and discuss their preliminary findings on Friday 27<sup>th</sup> July. Contact the SPGS if you would like to attend.

*Forthcoming SPGS Newsletters will include summaries from all these studies so make sure that you receive your copy – Ed.*



## EMBRACING TREE GROWING IN UGANDA - SPGS community planters tell their side of the story.

By Zainabu Kakungulu

**T**he main objective of the Sawlog Scheme is to promote private commercial tree growers in Uganda. Of course not everybody has the minimum of 25 hectares of land to apply for the SPGS planting grant and there are many Ugandans who want to plant timber crops but are constrained by lack of land. To cater for (some of) this demand, the SPGS in 2004 launched a community planting scheme which is supporting interested individuals (and groups) by mobilising, training and supplying seedlings. Luweero district was the pioneer beneficiary and the obvious place to visit to meet some of those who have benefited from the scheme and share their experiences. So one day in early June 2007, I headed to Luweero.

**Mr. Ssempebwa Gideon** of Bukalasa Village was the first tree planter I met there. In Gideon's garden used to be a few Musambya trees (*Markhamia lutea*) which were planted by his father over many years ago. About 10 years ago he cut them down and used the timber to construct his house. When he calculated how much he had saved by using his own timber, he realised the value of trees and felt obliged to plant more trees. Seven years ago he planted a few *Eucalyptus* trees but he was unfortunate as many of them were eaten by termites. He was able, however, to get small poles which he used to construct a paddock for his cows. He wanted to continue with his planting but could not do much because it turned out to be more costly than he thought, especially the cost of the seedlings. To him the coming of SPGS was very timely: when he heard about the SPGS from the community mobiliser, it was an opportunity for him to continue with his dream. He has been on the scheme for two years and has received *E. grandis* seedlings to plant two acres. He is so proud of his achievement and also boasts of being an inspiration to others whom he says he has advised to join the scheme. His current income is from selling coffee and milk from his cows. His trees will be a welcome supplement to his future income.

My next stop was at **Hajjati Nalweyiso Aisha**. Unlike Gideon her trees are planted together with beans because she has a problem of limited land. When I asked her about why she valued trees and opted to plant some despite having little land, she says trees are good for environmental reasons but can also be a source of income in the future, although she had no idea how much to expect. She has a few scattered pine trees and according to her she expects her first harvest in five years. The correction that the harvest from pine would take up to 20 years was a little disappointing but she was very optimistic for the future and her wish was to plant more if she had the land.

Later in the day I headed for another village (Gembe) to meet one of the role models to the youth in this village – namely, **Mubiru Laban**. His journey to planting trees started with growing *Grevillea* for fuelwood. Since he had ventured into tree planting before, he easily embraced the idea of planting

more trees for timber. He joined the rest of the community members in the tree planting association [LEMA] and with the support that he has received from the SPGS, he has been able to establish two acres of pine on his land. He hopes to plant one more acre. Of his 8 acres of land, he has dedicated three acres to tree planting. He is hoping to earn big in the future based on his estimated value of sh150, 000 per tree at the time of harvest.

His biggest challenge is labour because during the rains he has to work in his garden as well and therefore has to employ someone to do the work on his plantation which itself is costly. He however admits that it is a sacrifice he has to make because good things never come easily.

It would appear that the support from the SPGS is important to these small farmers. We have enormous demand to expand our community activities but are limited by resources (staff and cash!). Let us hope that we can attract further funding in the future to keep the momentum going.



Mrs Karoli Nakimera (left) and Margaret Bamukyawa – members of LEMA (Luweero Environment Management Assn.), who have benefited from SPGS support since 2005.

# MAJOR PESTS OF TREE PLANTATIONS – II – THE *EUCALYPTUS* CHALCID



By Paul Jacovelli

## 1. INTRODUCTION

The *Eucalyptus* Chalcid wasp (or Blue Gum Chalcid) - *Leptocybe invasa* – was first identified in the Middle East in 2000 and has quickly spread to most Mediterranean countries and also North and East Africa. It was identified in Kenya and Uganda at about the same time (2002). Tanzania first reported it in 2005. It has recently (2007) been reported in India too, which has 8M ha of eucalypts. The BGC is rapidly becoming a serious pest of *Eucalyptus* spp., affecting mostly nursery seedlings and young plantations (though older trees can be affected too).

Severely attacked trees show a gnarled appearance, stunted growth, dieback, and may eventually die. Since it was first spotted in Uganda, it has rapidly spread and *Eucalyptus* growers from several districts in the country have reported the pest as a serious constraint to the cultivation of *Eucalyptus*. Unfortunately very little is known about the biology and ecology of the insect, although it was described in 2004 as a new species of Australian origin.

## 2. EXTENT OF DAMAGE

The adult is a very small (1.0-1.4 mm long) black wasp. It lays eggs in the bark of shoots or the midribs of leaves. The eggs develop into minute, white, legless larvae within the host plant. The developing larvae induce galls to form on the host plant tissue. Small circular holes, indicating exit points of adults, are common on the galls. Infected shoots appear deformed and a heavy infestation results in loss of vigour, severe growth retardation and even branch (or tree?) dieback.

### The following observations have been made in Uganda:

- BGC is present over most of Uganda except in cool Kabale.
- *E. grandis* appears highly susceptible; *E. camaldulensis* less so.
- *L. invasa* infestation is most severe on young trees (less than three years old).
- Hybrid clones in FORRI's *Eucalyptus* trials show varying degrees of susceptibility.

- The incidence of the pest is greater on stressed trees (i.e. planted off-site and/or not well weeded – both of which are common practices in Uganda).
- The incidence of the pest has steadily increased since it was first identified in Uganda.

## 3. CONTROL MEASURES

Currently no control measures are available for this pest and management of BGC is likely to be very difficult. Chemical control is not considered a viable option except possibly in a nursery situation. Since 2004, the SPGS has been advocating better silviculture – in particular, more careful attention to selecting *E. grandis* sites and better weed control – to reduce the stress. The SPGS has published many Guidelines and Newsletter articles to promote improved silvicultural practices for those growing Eucalypts but we have to admit that very few growers are taking onboard the facts that *E. grandis* (the main species for timber and pole production) does not tolerate competition from weeds or like the very hot conditions experienced in parts of Uganda.

Biological control measures probably offer the best long term solution. Israeli researchers have been several times to Australia to identify natural predators of the Chalcid as well as another gall forming wasp attacking Eucalypts in Israel – *Ophelimus maskellis*. Predator wasps have successfully controlled the latter pest and the scientists expect to have predators available for the Chalcid within a year. Scientists at the Forestry & Agricultural



A young *E. grandis* seedling already affected by the Blue Gum Chalcid in a poorly managed nursery near Jinja.

Biotechnology Institute (FABI) – lead by Prof. Mike Wingfield – are in contact with these Israeli researchers, which is why we have arranged for FABI scientist to visit (see Page 15).

Some of the material for this article was kindly provided by Dr Philip Nyeko, from Makerere University. The SPGS has an information pack on the BGC available for whoever is interested (this includes scientific and press articles). The SPGS is also currently drafting a detailed Guideline (in conjunction with others mentioned in the article) on this pest, which should be available by August 2007.

# PHOTO COMPETITION



*One of our favourite pictures, this was taken at the beautiful Mpanga Forest, some 40 kms west of Kampala on the Masaka road. Mpanga is one of the few remaining Tropical High Forests in Mpigi District but is under intense pressure from surrounding communities (including drum-makers!).*

**I**n conjunction with the Commonwealth Forestry Association (CFA), the SPGS is proud to announce a 2007 Photo Competition. Get those cameras out (or borrow your friend's) and send us your best shots. Fame – and some very nice prizes – awaits!

The theme is very simple: **TREES AND PEOPLE**. We will leave it to you to interpret how you like (black and white or colour). Just send us your original photos (max. 3 per entrant)

## TRAINING UPDATE

20 keen people turned up for the 4-day *Plantation Planning & Establishment* training course run for the 1st time in Jinja. We even had our 1st participant from Kenya (hope you enjoyed it John Masai Kapolon from Jomo Kenyatta University, Nairobi!). One gripe though - 5 trainees didn't turn up, which meant 5 others were denied a place on the course (we are always over subscribed). Please inform us in advance if you (or your Supervisor) cannot make it. Anyway well done to Sylvia Tushemerierwe from CBM Forest Plantations planting in Rwoho CFR in the hills of Mbarara. Sylvia scored the highest of the trainees in the last day's test and won for herself a copy of the excellent book we often recommend – *Plantation Forestry in the Tropics*. NB. Copies of this book are still available from the SPGS office at the bargain price of Ushs100,000.

We are planning to run another Planning & Establishment course from 6-9th August, this time based in Luwero. Contact Josephine to reserve a place for your senior field staff.

by Friday 31st August. Digital preferred (try to make sure the quality (resolution) is reasonably high (e.g. 1MB ) but we will accept A4 sized prints or 35mm slides too. Send your entries by Email to [info@sawlog.ug](mailto:info@sawlog.ug) or deliver to our Bugolobi office. Make sure you write your name and contact details on any discs (or the back of the prints). The competition is open to anybody except SPGS staff.

The short-list will be judged by an independent panel and displayed at the Sheraton Hotel during our forthcoming Plantation Seminar in late Sept. 2007 (date to be confirmed). The winner will win a brand new digital camera and an all expenses paid press assignment from the SPGS (to be published in the SPGS Newsletter). Runners up (and the winner) will also receive annual subscriptions for the CFA and SPGS shirts. What are you waiting for? Get out there and start snapping!

## IN THE NEXT ISSUE

**YOU CAN LOOK FORWARD TO...**

- **Plans for species trials.**
- **Making sense of Carbon funds.**
- **Certification: the way ahead.**

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