

SAWLOG PRODUCTION GRANT SCHEME



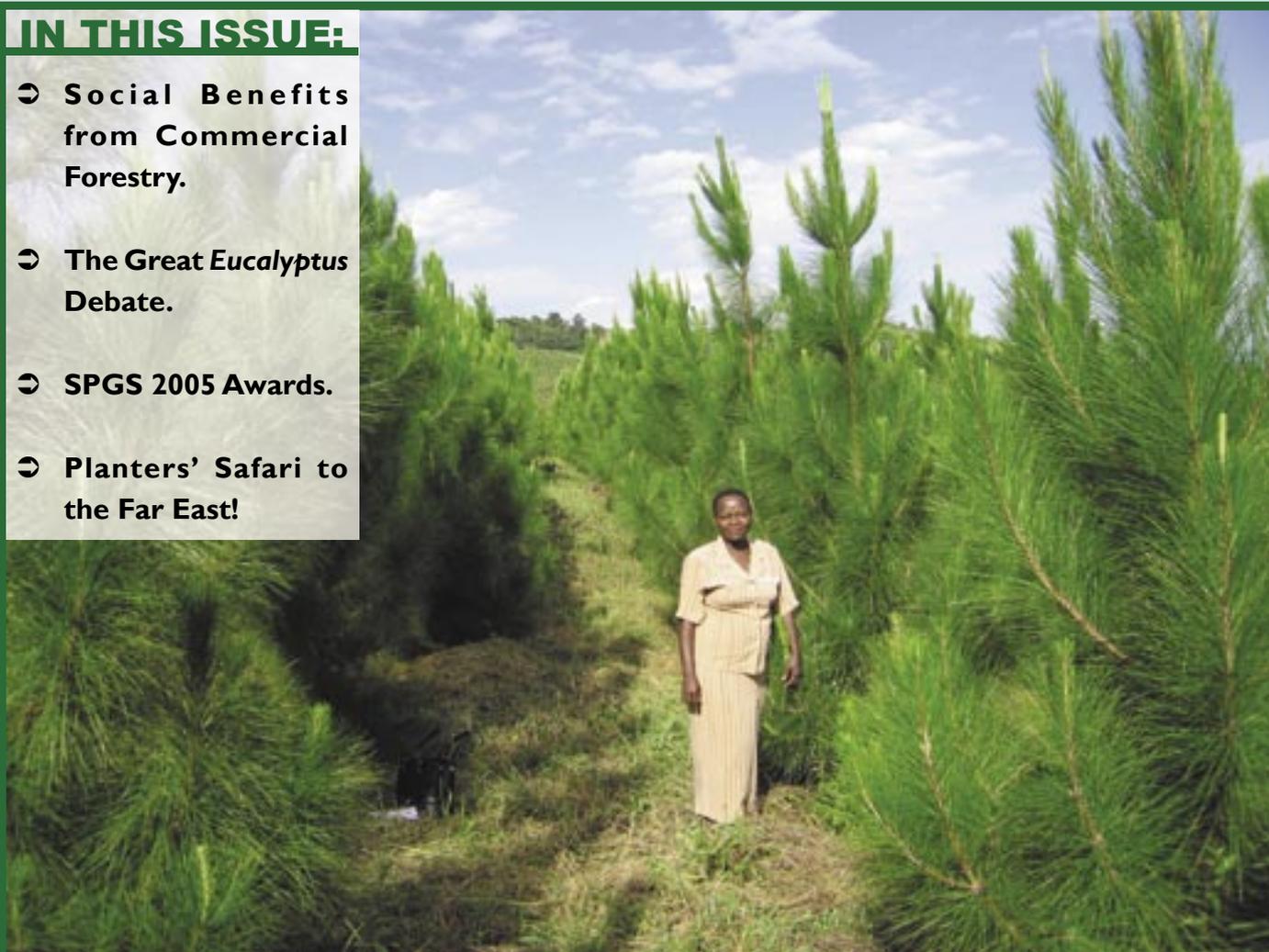
News of Uganda's commercial tree planting fund for the private sector

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IN THIS ISSUE:

- Social Benefits from Commercial Forestry.
- The Great *Eucalyptus* Debate.
- SPGS 2005 Awards.
- Planters' Safari to the Far East!



Margaret Bamukyawa requested that we took her photograph so she could show her colleagues what a well established pine plantation should look like. She was attending the SPGS Plantation Establishment training course in Kyenjojo in Dec.2005. Margaret is the representative of a community in Luweero that has benefited from advice and tree seedlings from the SPGS after they had expressed interest in tree planting. The crop is *Pinus caribaea* var. *hondurensis* from Australian seed orchard seed: it is a demonstration planting at Oruha CFR and is only 26 months old.

Private tree planting in Uganda continues to expand at a remarkable pace. People everywhere are talking about growing trees on their land and commercial tree planting is starting to be taken seriously as a viable business venture. This is good news for rural people as thousands of jobs are being created and many people receiving training in relevant skills. The Sawlog Production Grant Scheme (SPGS) has undoubtedly been the key

driver in this transformation. In just over two years, private planters have established over 2,700ha of timber plantations under the SPGS. Given the depressed state of the sector for many years, this is a great achievement and it proves that the private sector are willing to invest in commercial tree planting here, particularly with the incentives of a planting subsidy and the availability of sound technical advice.

WHAT PEST IS ATTACKING MY EUCALYPTS?

There is a good chance that it is the chalcid wasp, which was first spotted in Eastern Uganda around in 2002/03. It has since spread to most parts of the country where Eucalypts are growing. The insect was recently identified by Australian scientists as a new species - *Leptocybe invasa*. It has also been identified in Kenya, Ethiopia, Morocco, Iran, Italy and Israel.

What are the symptoms?

The usual signs of the chalcid's attack are stunted growth, dieback and even death of the tree (see photo right). Swellings (known as galls) will be seen on the leaves and stems of the new growth and often small holes are visible, where the adults emerge from (see photo below).

What does the insect look like?

The adult insect is an elusive creature: it is black with transparent wings; very small (less than 1.5mm long) and only lives for about 10 days. But during the 10 days it can cause havoc by feeding and laying its eggs in the young leaves and shoots. When the chalcid larvae are developed, the adults exit from small round holes that can be often seen on close inspection of an infested tree (see photo below).

How serious a threat is the Chalcid?

Any pest or disease that occurs in plantations of exotic trees (e.g. Eucalypts and pines) must be taken seriously, particularly when it is an imported pest, which will have left its natural enemies behind. In such circumstances the

pest population can explode quickly once it finds a suitable host. Because it is so small the wasp is undoubtedly dispersed by wind and because of its rapid breeding it can spread very quickly.



Typical signs of the chalcid: swellings and the exit holes where the adult emerges.

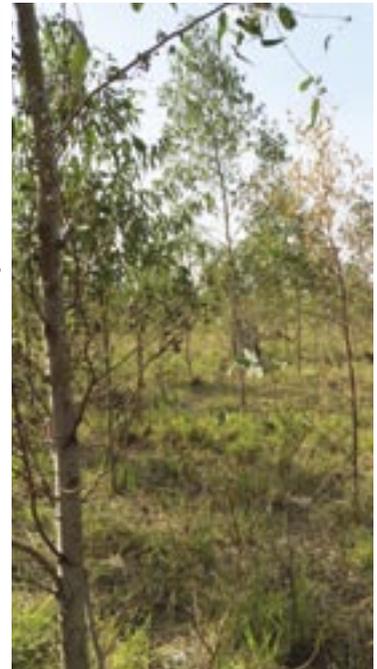
Are there any control measures?

In the plantation situation chemicals are out of the question except possibly in the nursery. The best long-term solution is likely to be biological control but this will take a number of years to first find suitable parasites and then test them under our conditions.

Our observations to date in Uganda, however, indicate clearly that where the Eucalypts are stressed, the incidence of the pest is much higher.

Stress can be caused by off-site planting, poor seedlings, bad planting and especially by not weeding well enough.

If infected trees are spotted it would be wise to remove and burn them immediately but normally the wasp has bred and moved on. As for any such problem, infected material should not be moved to other parts of Uganda!



An *E. grandis* plantation in Kumi, eastern Uganda, heavily infected by the chalcid wasp. This is not a good site for *E. grandis* and the weeding was poor: the stressed trees were thus susceptible to attack.

CERTIFICATION

Many of you will have heard of the concept of certification: here we try to explain what it means in plain English.

Forest certification is a voluntary process whereby forests are certified against a strict set of environmental and social standards. The certification process is carried out by an independent body such as the Forest Stewardship Council (FSC).



Certification is driven by a variety of interests. For industry and trade it is a way of environmental marketing to sell their 'green' goods. For buyers and consumers, it provides information on the products they purchase. For forest owners, certification is a tool for gaining market access or market advantage by attracting price premiums for products grown sustainably.

Although promoted for forest management reasons, the main interest of most of those undertaking certification is in the marketing benefits it may offer them.

South African timber companies were amongst the world's first to be certified: the country now has 75% of its 1.4M ha of plantations certified, mostly by FSC.

In forthcoming issues of the SPGS News we will look in more detail at certification standards and discuss whether private timber growers in Uganda should be looking at certifying their forests.

SPGS 2005 AWARDS

The inaugural SPGS Awards for plantations established in 2005 have been decided. It was certainly not an easy decision since there has been such a significant improvement in standards during the past year or so - but as they say, someone has to win. After much deliberation amongst the SPGS Team, we are pleased to announce the following results:

✳ **The best 2005 SPGS planting award goes to:**

BUSOGA FORESTRY COMPANY (BFC) for their excellent April/May 2005 *Pinus caribaea* plantation, established in Bukaleba CFR, Mayuge District (photo right). BFC – whose parent company is TreeFarms AS from Norway - have been around in Uganda since 1990, when they were allocated a tree planting permit in Bukaleba CFR. With the support of the SPGS, however, they have now seriously started to invest in new plantations. In the two years since the SPGS started, BFC has established 256ha and expect to complete their 500ha SPGS Contract in 2006.

As you can see from the photograph, BFC's 2005 planting is excellent. They prepared the land well (clearing, lining out and pitting) before pre-plant spraying with Glyphosate. Planting and beating up were obviously carried out in good time and the pine seedlings were clearly of very good quality (Australian seed raised in their own nursery). Subsequent weeding has been good too, keeping competition to a minimum. The result is a fast growing, uniform crop and the top prize from the SPGS! Well done to Jossy Byamah (BFC's Forest Manager) and his enthusiastic team.

The Runner(s) Up in this category were the 'Mafuga Group' of Fidel Begumisa, Bavame Enterprise and Jonathan Kirasha for their *Pinus patula* plantings in Mafuga CFR, Kabale District.



Busoga Forest Co.'s prize-winning 2005 *Pinus caribaea* planting in Bukaleba CFR.

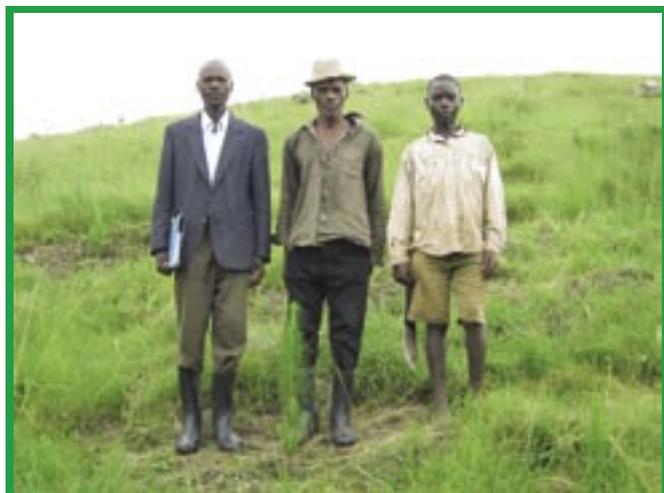
✳ **The most improved SPGS planter in 2005 is:**

ARTHUR BUSINGYE for his April/May and October 2005 *Pinus caribaea* planting in Kasyoha-Kitomi CFR, Bushenyi District. Arthur's father, the late Jack Busingye, started planting over 5 years ago (not under the SPGS) but the choice of species was wrong for the site (*Pinus patula* and *Cupressus lusitanica*) and also they used poor seed (especially *P. oocarpa*).

The 28ha of Australian seed orchard *P. caribaea* planted in 2005 was a huge improvement. The Supervisor, Gad Namara, attended SPGS training courses and most importantly, was supported by Arthur Busingye to turn things around on the ground. They now expect to complete their 100ha SPGS contract in 2006.

A close Runner-Up in this category was **Wakitaka Farms Ltd.** for their excellent 70ha of *Pinus caribaea* planted in both rainy seasons of 2005 in Ngereka CFR, Jinja District.

The awards will be presented at the next Clients' meeting planned for May 2006.



Gad Namara (left) with two of his workers posing in Arthur Busingye's 2005 *P. caribaea* planting: A great improvement on earlier efforts.

READ ANY GOOD BOOKS LATELY?

Well here is one we strongly recommend for you: **Plantation Forestry in The Tropics** by Julian Evans & John Turnbull. It is sub-titled "The Role, Silviculture, and Use of Planted Forests for Industrial, Social, Environmental, and Agroforestry Purposes". The SPGS is in the process of purchasing a number of copies of this book from the UK, which we will make available to clients at cost price. Contact Allan for details.

EUCALYPTS AND WATER

Eucalypt species - especially *E. grandis* – are extremely popular with both small farmers and commercial growers in Uganda. The reasons for this are clear: they are adaptable to a wide range of sites, they are easy to grow from seed, they grow fast (if cultivated properly), they produce a range of utilisable products (including firewood, poles and timber): they even usually re-sprout (coppice) when cut!

It is not all good news, however. Eucalypts have been the target of criticism in many countries, including Uganda. They have been accused of excessive water use, depleting the soil of nutrients, causing biodiversity loss and degrading sites. Some critics even go as far to blame climate change and periodic droughts (like being experienced presently in East Africa) on Eucalypts.

Welcome to the great Eucalypt debate! Which side of the argument are you going to take? The danger of course is that the tree planting pro-lobby retreat into their corner defending their beloved Eucalypts for all they are worth and the anti-Eucalypt people can't see anything good about the tree at all.

In order to bring some balance into the debate, we have researched the matter for the NFA/SPGS Plantation Guideline series*. It is a big topic: here we just have only space to discuss two aspects of the debate, namely the importance of Eucalypts in Uganda and their water use.

Eucalypts play an important role in the rural economy of Uganda, where they provide domestic and industrial fuelwood, building and transmission poles and timber. The trees' popularity with small farmers and big commercial planters alike, has already been mentioned. Here in Uganda there is a looming crisis in timber production and no other species has the ability to produce (in such a short time) a reasonable quality timber like *E. grandis*, in particular. It is thus clear that Eucalypts will remain important for both the small and large-scale tree planters in Uganda for the foreseeable future. But the water issue does not go away.

Eucalypts are no different to any other tree in so far as they require water and nutrients to grow. The difference with Eucalypts compared to most other species is that where there is a plentiful supply of water and nutrients, they are able to utilise them and grow extremely fast. Research has proven, however, that Eucalypts are very efficient users of available resources. The problem comes where such resources are marginal since Eucalypts are able to compete vigorously for them.

Careful planning to identify where Eucalypts can be planted without affecting other interests, should alleviate much of the problem. Commercial planting should be confined to parts of the country with Mean Annual Rainfall of over 1000mm. At the planning stage, sensitive areas also need to be identified. There should be no planting, for example, in wetlands or within 20 metres of any streams. This still leaves plenty of areas in Uganda where water

is not a limiting factor and where Eucalypts can be cultivated to produce various products.

Some other important factors that contribute to a reduction in water availability are often overlooked. Drought periods occur periodically throughout history although global warming now appears to

be exacerbating matters. Additionally, widespread deforestation in the country has not only affected local climate but also leads to increased runoff when it does rain.

So where does that leave us? In a nutshell, Eucalypts have an important role to play in both small and large-scale tree planting in Uganda. More care, however, needs to be made in the planning phase to identify sensitive areas where reduced run-off from planting Eucalypts might deleteriously affect peoples' livelihoods. We did warn you that it is not a simple topic: read the Guideline for more details.

* NFA/SPGS Plantation Guideline No. 22 – Feb 2006. *Eucalyptus & the Environment: Separating Fact From Fiction*. Copies are available from the SPGS office and on the SPGS web-site www.sawlog.ug



The SPGS is Not Just About Trees

Continued establishment and expansion of commercial tree plantations is a significant way forward to rural poverty reduction in this country. The high standards of silviculture being emphasised by the SPGS are very labour intensive: practices such as thorough land preparation, intensive weed control and eventually pruning and thinning, all require a lot of labour.

It is thus no surprise that planters like Precision Sawmill Ltd. have found themselves employing many people to keep their plantations up to the standards required by the SPGS. As a consequence of work becoming available where previously there was virtually none, some of these people have begun to turn their dreams into reality: read on.....

It is against the above developments that Julius Byaruhanga became one of the pioneers of 42 workers at Precision Sawmill's plantations in Kasana-Kasambya CFR, Mubende. Julius is 30 years old, single and joined Precision in May 2003. Previously he was doing casual work in his home village in Kabale District where he could only earn 1000 US\$ per day whenever work was available. In those tough days, he says he could not do anything beyond feeding.

Currently at Precision he earns 2500 US\$ net per day. He has an interesting way of saving money, namely, he works for 6 months without demanding for any coin and after this period he gets his money at the door of the bus as he leaves for his home. When asked about general welfare, he says adequate good food is provided and when sick he is given free treatment by the company. Their accommodation is also being continuously improved upon.

SPGS was keen to inquire about any major investments the fellow has done with his savings and Julius with a beaming face proudly announced that he had graduated from a grass thatched house to a three room, iron sheet roofed house. He has also managed to purchase a heifer, and a piece of land. He adds "the sky is the limit for my investment future".

When the SPGS's Community Planting Officers, Charles and Alex, met with Julius to hear his story, he thanked SPGS for a nice T-shirt and its technical and financial support to Precision plantations.

So many more other people like Julius are employed by the SPGS-supported investors. It was established during the recent SPGS clients meeting in Jinja (1st Feb.'06) that its clients alone employ well over 2,200 people at peak times and nearly 300 of these are full time jobs.



Julius's Mother, Julius's heifer, Julius himselfand Julius's new house!

There are also other jobs being created in support services too. This shows one way how the SPGS contributes towards rural poverty reduction in our country.

SEED UPDATE

Pinus caribaea var. *hondurensis* (PCH):

We have had reports from some growers of poor germination with the Brazilian PCH seed. After contacting the National Tree Seed Centre (NTSC), it seems that some buyers did not receive (or ask for!) a Seed Handling Sheet. Here are the recommendations from the Brazilian supplier:

- store the seed at temperatures of 4° - 8 °C.
- let the seed acclimatize for 12-24 hours.
- soak the seed in chlorine-free water for 12-24 hours, changing the water every 6 hours.
- sow 1 or 2 seeds in each tube, 3-5mm deep.
- control fungi as necessary.

The NTSC is also trying to get more PCH seed from Australian and South African seed orchards in time for the next sowing season.

Eucalyptus grandis (EG):

An order has also been placed for EG seed from specially selected, superior trees in timber stands in South Africa. This seed is expected here soon. We will, as always, keep you informed of developments.



THE 1ST SPGS CLIENTS' MEETING OF 2006

In the spirit of continued experience sharing in plantation establishment, SPGS organised her 5th clients meeting (2nd field based) covering the districts of Mukono, Jinja and Mayuge. The first stop was at Ferdsult Engineering Services' plantation in Buikwe, Mukono. Issues shared while at Ferdsult included among others:

Poor site species matching (EG - *Eucalyptus grandis* and Teak – *Tectona grandis*) leading to poor growth and highly stressed crops; the chalcid wasp on the stressed EG; EG for transmission poles and/or timber (where initial stocking was too dense at 2,500 sph); the importance of thinning EG on time and to the right number of stems; pruning (where we saw the dangers of using poor tools and the wrong technique); young PCH: problems with late planting (don't blame the rains!). In addition to the impressive EG, everyone admired the excellent infrastructure (especially the roads) on his land.



Richard Byekwaso (Ferdsult's Site Manager) explaining how he has marked their 2-year old *E. grandis* for first thinning. The SPGS Advisors recommended carrying out a heavier thinning to bring the stocking down to around 7-800 sph (stems per hectare). This would produce bigger trees whether for poles or timber.

From Ferdsult, clients headed for the Busoga Forest Company (BFC) who is planting in Bukaleba CFR in Mayuge. Next to BFC is an NFA plantation inherited from FD. This allowed clients to make many good comparisons most especially on standards. First on the menu, clients were able to see the brand new NFA fire fighting equipment, including a 500lt water tank and pump mounted on a pick-up truck, which impressed every one.

Next was a long walk through BFC's PCH 2004 planting. The key issue here was the poor site (shallow soils) and poor weeding, which resulted in a variable crop. The walk continued and soon most people were nodding and admiring the 2005 PCH planting. It was a show of excellent silviculture practice (refer photo Page 3). A few



Pastor Amumpe preaches to his congregation of SPGS clients and a growing number of others interested in getting in on the act (of establishing timber plantations that is!). This was at the boundary of Ferdsult's land next to SCOUL near Lugazi.

challenges such as problems with supervision and training of the spray team (some patches not sprayed) were now causing headaches, but BFC's Manager, Jossy Byamah, says they are catching up on these.

Still with BFC, clients were able to see 8 yr Musizi (*Maesopsis eminii*) crop which shows a lot of potential. The debate over initial spacing and inter-cropping was really getting interesting when Allan rounded every up to head to the next stop. At the nursery, Jossy explained how PCH from Brazil was performing. Several concerns were raised especially its poor germination (see page 5 for more details). Finally clients walked through a 12 yr. old PCH planting of NFA (inherited from the FD), which had only just been thinned for the first time. Once again clients were reminded the importance of thinning on time and what poor seed gives you at the end.

The day seemed to be short and soon we realised it was getting to 3pm. Into the cars again and the convoy headed to Nileply plantation in Ngereka CFR along Kamuli road in Jinja. At Nileply's plantation people were able to see the consequences of taungya (especially maize) at planting – high variability and poor stocking, which had to be beaten up very late. Since Nileply had not done any pre-plant spray, they had a heavy weed growth which caused a lot of problems.

Across from Nileply's plantation, clients were informed that another SPGS client (Wakitaka Farms Ltd) was planting but the sun was almost setting.

That marked a very good day with lots of sharing and learning, as we headed to the Kingfisher Safari Resort in Jinja to recharge the batteries before the more formal SPGS client's meeting the following morning.

Masaka Man Pleads To Continue the SPGS

For many months during 2005 a private tree planter in Nabukonge CFR in Masaka - Mr. Swkejewa Mohammed - kept badgering the SPGS team to come and visit him to give him some advice and (hopefully) some financial assistance. Eventually in August 2005, Paul stopped off after visiting the nearby Masaka Diocese (clients of the SPGS) - and what a surprise awaited him! He found a Reserve that had been severely deforested being covered with trees again. Better that we let Mohammed tell you himself.....

"I have planted 64,000 pine trees, some of which are now over 30' tall. I have also planted Eucalyptus, Araucaria, Podocarpus, Toona, Cedrela and others. I am watching them grow every coming day and I see myself earning money and jumping out of the poverty basket in a few years to come".

Mohammed has applied for more land from the NFA to continue with the



Mohammed proudly posing next to a Podocarpus tree in Masaka.

mission he has started. To do so he has pleaded with Allan for the SPGS to assist him as the work of establishing trees is expensive during the first few years. Over to Mohammed again:

"This has not been a one-man show: I have worked with the local peasantry and with their cooperation things are moving along smoothly not forgetting the technical guidance from the District Forest Officers, the NFA and now the SPGS".

Mohammed is one of over 80 people (though not all have such a good CV!) who have submitted formal applications to the SPGS. He was one of many who missed out on a contract the first time around. Some of those with resources started planting in the hope of receiving SPGS assistance: many others haven't started at all. Let us hope that we will be able to meet this 'growing' demand.

Energy Forests For Power

With electricity production (or lack of it) the talk of the country at the moment, the recent study commissioned by the SPGS was rather timely. Against the backdrop of very expensive thermal generators running in Kampala, Forestry Industry Services (FIS) have just delivered a draft of their report identifying feasible models for rural electricity production from woody biomass. They highlight at the outset that only 5% of Ugandans have access to electricity and in rural areas this figure is as low as 1%.

They first looked at the 'feedstock' plantations, which are managed on very short rotations (1-5 years) and established at high densities (up to 15,000 plants per hectare). The most promising species they identified were *E. grandis* and the indigenous *Markhamia lutea*. Others could have potential (e.g. *Cassia*) but there is no reliable growth data available. Yields of *E. grandis* of 40m³/ha/yr and *Marhamia* 20m³/ha/yr were predicted from rotations of 1-2 years and 1-3 years respectively. They recommend, however, that commercial energy forest trials be established to determine the most appropriate management systems.

FIS then looked at the conversion technology. There are two types of conversion technologies for small to medium scale bioenergy systems (30kW to 1MW capacity), namely:

- ⊗ Wood gasification: whereby wood is burnt in a restricted air supply and the gas produced is then used to run a combustion engine.
- ⊗ Combustion: whereby wood is burnt and heat used to run a steam engine or turbine.

There are pros and cons with each method e.g. gasification is more efficient (18-25% compared with 10-15%) but on the

down side, there is little experience of such systems here.

The consultants then looked at possible business models and did some calculations based on two scenarios - a 250kW gasifier and a 1MW combustion base system. The gasifier would require ca.100ha of *E. grandis* per year and a capital cost of €330,000. The combustion system requires ca.550ha *E. grandis* per yr. and a €1M investment. The production costs per kWh are US\$0.08 for the gasifier, US\$0.065 for the combustion option. This compares favourably with the current cost of electricity from the grid for small industrial users - and without any subsidy. In comparison diesel (thermal) generation costs US\$0.21 per kWh and is clearly unsustainable as it is burning fossil fuels.



Coppiced *Marhamia lutea* at Nyabyeya, Masindi (1.5 yrs old).

The conclusion is that in Uganda there is significant potential for bioenergy production from energy forests. It offers the prospect of cost efficient energy production, which also provides significant environmental benefits too (e.g. carbon credits). FIS point out that there are already funds available (Private Sector Foundation and the World Bank funded Rural Electricity Fund) for the private sector to plan and install bioenergy systems. The main barrier for implementing bioenergy systems, they conclude is the lack of experience and know-how and the associated investment risks. By promoting energy plantations, business opportunities and a strong poverty focus (producing rural electricity), maybe the SPGS could work with private investors and funding institutions to produce power as well as sawlogs? What do you think? The full FIS report is available from the SPGS.

SPGS PROGRESS

As this Newsletter went to press, the private investors under the Sawlog Scheme had planted 2,710 ha.

Planted is the wrong word since they have planted more than that but only 2,710 ha has been inspected by the SPGS team and approved for the 1st installment of the grant (Ush300,000 per ha).

The areas being revisited for 2nd and 3rd payments (both payments are Ushs 150,000 per ha) are now increasing rapidly too. Of the 2,710ha, 60% has now been paid for the 2nd installment and 25% for the 3rd (and final) installment.

From our recent site visits it is clear that some SPGS planters need some further guidance before they receive the 3rd payment. It does not come automatically but depends on the whether the planter has maintained his crop post-establishment and also carried out at least rudimentary protection measures like firebreaks and access roads. The SPGS Team also look favourably on those who are making an effort to improve the conditions of their workforce.

An impressive tree don't you think? It is a 50-yr old E.grandis growing in a small Central Forest Reserve just outside Fort Portal. The NFA's National Tree Seed Centre collect from this stand periodically and the seed is approved for use by SPGS clients.

Tree Planters' Diary

(what you should be doing during March & April!)

- ❑ **Planting into the early rains (once the soil moisture is sufficient).**
- ❑ **Weeding of older crops (especially last years' plantings).**
- ❑ **Beating up (replacing failures) should be carried out within a month of the intial planting.**
- ❑ **Book for the Maintenance course (see below).**

Plantation Training Courses

Sorry, but a rather important event on 23rd Feb. meant that we had to postpone the planned Plantation Maintenance Course. It has now been rescheduled for the **27-30th March 2006** based at the Kasunga Tea Training Centre, some 25kms west of Kyenjojo town. Book places with Allan early as there are a maximum of 25 places and this course is good - believe us! It covers manual and chemical weeding (post-plant), pruning, thinning, basic tree measurement and Eucalypt coppice management. On this course, we also visit James Finlay's tea estate, to see their excellent *Eucalyptus* silviculture.

A Plantation Establishment course was held around Kyenjojo in early Dec. 2005. Some 20 participants (mostly SPGS clients' employees) attended and judging from the test results and the interest shown during the 5-day course, they returned home with considerably more knowledge than when they arrived.

IN THE NEXT ISSUE

...will be features on the following topics (all are in response to requests at the SPGS Clients' meeting at Jinja on 2st Feb. 2006 - so don't blame us!):

- Marketing of small diameter material from your plantations.
- Tree & forest yield measurement: the basics.
- Plant spacing and why it is so important in tree plantations.
- Valuation of your forestry investment.

Bet you can't wait can you? The Newsletter should reach you by early May 2006 and will be on our web-site too. Contact Joyce (see details below) for extra copies for your staff or friends.

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