



AGRO INVEST BOHEMIA CORPORATION

2010

Rural development project



Václav Sobota

Agro Invest Bohemia Corporation

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AGRO INVEST BOHEMIA CORPORATION

1. The Company

1.1. Corporate structure

The Agro Invest Bohemia Corporation's establishment process began in early fall of 2009. The company has been setup as means to access the undeveloped rural areas in emerging countries, which offer high potential for the main objective of Agro Invest Bohemia Corporation („AIB“), which is to develop void outback into (natural environment friendly) artificial ecosystems providing permanent economical and social profit both for the surrounding communities and for the investors involved without causing any extensive environmental damage on the local wildlife flora or fauna.

Due to his rich experience in the field of rural re-cultivation, Mr Tomas Sobota was elected to become the CEO as he is the major shareholder of the AIB. Mr Sobota holds the 99,6% majority, the remaining 0,4% of which belongs to business affiliates, while this ownership structure guarantees presence of all the necessary know-hows for the project of proposed range.

1.2. Vision & mission

We believe the major objective of every business is to generate profit. This fact is conjoint for most of the companies all over the world. However, the way to meet the objective varies from company to company as well as management to management. The premise of AIB is based on several principles, which is to make our company beneficial for the society as well as for our shareholders. The key means are as follows:

- to use domestic products – import only when necessary
- to cooperate with local authorities – helpfulness becomes mutual
- to focus on maximal efficiency – employment rate is less dependent to actual conditions, increases profitability
- to replace good with better – the created environment must be more socially-beneficial than its predecessor
- to maximize export – entire goods value remains within its origin
- to focus on continuity of development – improves social stability, ensures regional progress
- to prefer long-range objectives – only patience and sensitive management can bring real prosperity

The thesis we urge – that re-cultivations must be profitable, not sponsored – suits the best to the states that not affected with overinflated abuse of subsidies, therefore we consider the developing countries as the perfect locations to prove the truth of what we promote once again.

1.3. Background & know-how

The strong relations among the agricultural development industry and years of experience with benefication of wastelands make the AIB very desirable partner for key projects in field of our scope. The practical experience with waste management, plantation development, animal husbandry and facility-development predetermines us to succeed even in project requiring extremely complex solutions and rapid realization. The know-how we possess comes from leading European applied-research companies and is proven by many realized re-cultivation projects, usually benefication of surface-mining areas in Europe as well as establishment of artificial plantations in tropical countries of Asia. Our experience, conjointly with the know-how of our contractual partners, guarantees unmatched work quality and lays a firm foundation for surpassing the assigned tasks.

2. Forestry development program

2.1. General description

The most important natural ecosystem for tropical areas have been the tropical rain forest. This specific mixture of herbage and woody plants has essential effect on oxygenation of atmosphere, mastication of CO₂ and other greenhouse-gases, provides natural wildlife sanctuary etc. But, despite their exceptional ecological value, tropical rain forests doesn't offer explicit economical benefits for human society. Adversely, natural forests need to be protected, while the protection is spending funds, which has to be generated somehow. Nowadays, tropical rain forests are subject of non-conceptual lumber and fire-afforesting. The easiest way to merge needs of protection of nature and needs of economy, is to found an industrial forestry plantations, preferably instead of grassland and afforested areas, which can substitute the most of environmental functions of tropical forests, plus the additional benefit of economical and social positivity.

The AIB's Forestry development program delivers exceptional environmental value, mostly due to our unique methods of compound plantation, which helps to maintain natural diversity and improves resistance to tree diseases. More importantly, the economical benefits of industrial forestry assures significant rise of employment rate and socio-economical standard of surrounding region.

Current Forestry development program („F-Program“) of our Rural development project range („RDP“) is designed to be carried out on area of 3,800 hectares (roughly the 9,400 acres), while 1100 trees are expected to be planted on each hectare in average. It represents at least 4.2 million of trees planted, 43% of which was to be planted within the first year from the start of the F-Program.

Due to specific weather conditions in the respective plantation sites, F-Program's plantation's consistence has to vary, although, attention has to be paid mainly to *Albizia falcata*, *Anthocephalus chinensis*, *Gmelina arborea*, *Eucalyptus bridgesiana* and *Hevea brasiliensis*. Planting itself is continuous, never-ending cycle, while the plant-to-lumber period is set to be 7 years.

2.2. Setting up and nursering

Due to range and qualitative requirements of our forestry plan, outsourcing of seedlings, is impossible. As we are used to facing this problem, our suppliers have developed sophisticated nursery program, that has been successfully adjusted and tailored specifically for the tropical conditions. In chart below are noted technical and processing details of nursery project.

NURSERY DATASHEET (twin-cycle nursery process)

The area to be covered (plantation area) by 1 st year	1 680 hectares
Number of trees per hectare (incl. loss provision)	1 200 pieces
Total number of trees to be planted within 1 st year	2 016 000 pieces
Primary demand of seedlings (incl. loss provision)	2 320 000 pieces
Number of seedlings per each nursery's hectare	166 500 pieces
Necessary area of nursery's seedbeds (for twin-cycle)	12 hectares
Expected area of service site and lay-by	2 hectares
Total nursery area	14 hectares
Circumference of nursery's fencing	1 500 meters
Total nursery's permanent local workers in 1 st year	25-30 people

Very important in order to achieve a sufficient performance of nursery, it is very important to choose a site with suitable location. Nursery has to be placed leeward, close to a water source, but away from flood area. Also, the logistic accessibility is a key figure in deciding the placement of nursery facilities, because the location of nursery must not significantly increase planting costs

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(such as the delivery to a plantation site).

2.3. Planting and cultivation

To understand the system of planting is necessary to realize importance of continuity of future rough wood production (lumber). Therefore, as we set the 7 years plant-to-lumber period, entire plantation site is being divided into 7 units of identical size, approximately 540 hectares each. Within the first year of plantation, 3 units are planned to be set with trees, then one unit per every following year while since the 5th year of plant (as the first lumber occurs) begins re-cultivation (1 unit per year).

The range of F-Program requires to set with trees (in average) 4.5 hectares every day. This fact sets high demands on management quality, logistic organization, machinery equipment and coordination. However the amount of daywork may seem huge, our experience proved, that with much enthusiasm and expert handling of the project, these objectives can easily be achieved.

Chart below represents the plantation schedule and development

Schedule of plantation

<u>year of plantation</u>	<u>area of plantation</u>	<u>year of lumber</u>	<u>age of trees</u>
Year Y (1st)	Unit A (540 ha)	Year Y+5	5 years
Year Y (1st)	Unit B (540 ha)	Year Y+6	6 years
Year Y (1st)	Unit C (540 ha)	Year Y+7	7 years
Year Y+1	Unit D (540 ha)	Year Y+8	7 years
Year Y+2	Unit E (540 ha)	Year Y+9	7 years
Year Y+3	Unit F (540 ha)	Year Y+10	7 years
Year Y+4	Unit G (540 ha)	Year Y+11	7 years
Year Y+5	Unit A (540 ha)	Year Y+12	7 years
Year Y+6	Unit B (540 ha)	Year Y+13	7 years
Year Y+7	Unit C (540 ha)	Year Y+14	7 years
Year Y+8	Unit D (540 ha)	Year Y+15	7 years
Year Y+9	Unit E (540 ha)	Year Y+16	7 years
...

Cultivation process is planned to be as natural as possible, foliar spraying is to be minimized. However, permanent maintenance is not underestimated – we focus on fertilization, fallen leaves rake off, mowing the grass, extermination of parasitical plants etc. This intensive care improves growth rate of trees and have positive effect on responsiveness on involved workers.

2.4. Lumber and re-cultivation

The selection of tree species planted in F-Program is chosen according to local climatic circumstances of Mindanao island (or, more precisely the concrete plantation site) as well as to demand structure of European markets investigated by Chanlap Trade SDN. BHD. Ltd.

As seen in chart above (Schedule of plantation), lumber of first 540 hectares unit (Unit A) is planned for year Y+5, when the trees planted there reach 5 years of age, lumber of Unit B comes in 6th year of age of planted trees (Y+6) and finally, since the 7th year (Unit C onwards), all trees reach age on 7 years in the year of lumber.

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Technical view on lumber process reveals its magnificent requirements of investment into lumbering tools and devices, lorry fleet, forestry skidders and tractors etc. Also, proper education of lumbermen, drivers, operators and foremen becomes a necessity. All these facts together are the most common problem for successful establishment of forestry plantations in developing countries. The AIB's system of lumber, when relatively young trees are fabricated, reduces the need of hi-tech machinery significantly. The focus on best growth rate of the trees conjointly with relatively cheap production of seedlings also improves efficiency of entire program.

In the other hand, the process of re-cultivation, in spite of its high requirements on coordination and organization of labor force, doesn't require significant financial input – similarly to planting.

The process itself is almost identical with the plantation, it begins not later than one week after the lumber of site finishes and is (as well as plantation) provided by joint-venturers (local folks). The difference is mainly in the necessity of post-lumber clearing (benefication of left waste will be explained further described in the next chapter) of re-cultivation site and the shift of plantation net by side.

2.5. Employment policy

AIB's philosophy of company management is an evolution of famous Japanese corporate cultures. These philosophies allowed their bearers to reach the top-class productivity and labor discipline. Unlike Japanese original, our philosophy brings to management empathy, respect to individuals, environmental and social responsibility. Therefore, we are able to pay attention to natural loyalty, individual skills, human development and personal needs of our employees and partners, which helps them to work with passion.

Aside of conventional employment basis, the plantation process is optionally planned as a joint venture with local folks, while their „investment“ into the F-Program is their workforce, the AIB delivers seedlings (onto planting site), provides entire management, logistics and support, ensures lumber, transport and sales.

Revenue, in case of application of above mentioned joint-venture cooperation, is divided approximately by following figure:

25% of revenue is divided among the joint-venture subscribers

70% belongs to AIB

05% fills AIB's "sustainability fund" - cash saved for welfare purposes

The joint-venture cooperation basis would be reviewed in the end of year Y+5 and according to achieved results, the AIB's board decides whether to change plantation process into employee based form, or if to carry on with the joint-ventures.

Adversely, the process of lumber has to be, since its beginning, based on common employment policy with fixed basic salary and standard employment contract. As the process is designed to be continuous, becoming a lumberman (or driver, operator, foreman, eventually work on other relevant position) represents a permanent daily job.

Our projects focus on social development of the involved communities and individuals, therefore we undertake to reach at least 90% quota of local employees and thus minimize import of labor, which is to be reduced to specialists and top-management.

3. Rough timber fabrication program

3.1. Prospectus

To maximize social and economical benefit of commercial production is necessary to provide as advanced phase of products as possible. In case of industrial forestry, the most advanced practically available phase of production is manufacturing of sawn timber.

Saw mill, the fabrication facility, nowadays represents a piece of high-tech machinery requiring skilled crew and developed technological background. This fact usually represents unbeatable problem for application of competitive technologies in emerging countries. Thanks to our expertise, proper construction technologies, and properly selected partners, we are able to offer facilities with simplified, durable and reliable machinery ready to be maintained, operated and repaired locally.

3.2. Know-how

Major suppliers of machinery for our sawn timber fabrication facilities came from former USSR countries. They were selected due to their experience with production of simple and durable machines meant to be operated in extreme conditions with only low maintenance available. The characteristics of the used machinery allow us to make our plants operational rapidly, while we can obey our quota of at least 90% of local employees.

While every fabrication process creates a waste, the wooden waste from AIB-built saw-mill is to be converted (or, more preciously used for conversion) into charcoal (vide chapter 4.1.).

3.3. Social beneficiality

Not only is the establishment of the saw mill important for the prosperity of the primary project, but it brings about significant positive effect on entire surrounding region.

Above its primary function, the saw mill facility will help to improve accessibility of wood-fabrication services to public and craftsmen (carpenters, cabinet-makers etc.) and will have positive effect on decrease and stability of building timber's market prices on a local scale. This fact should ignite development of wood-related industry (such as furniture manufacturing, yacht constructing, prefabricated buildings production, production of multipurpose wood-fibre boards, etc.), improve affordability of habitacles and attract companies active in related sectors of industry and services.

All above mentioned fact can be summarized as resulting into huge potential of economical growth for influenced region, as the proportional rate between staff employed at AIB and new workplaces resulting from its activity is estimated to be 1:1 (every 100 of workplaces at AIB's facilities will create another 100 workplaces in partner and/or industry-related companies).

4. Bio-waste beneficiation program

4.1. Charcoal production

To increase efficiency and beneficiality of the F-Program, AIB decided to convert the non-utilizable wood into charcoal.

The charcoal is mainly manufactured with an earth-mount-technology, originally used in the Middle Ages. To create 10 kg to 15 kg charcoal using this method, about 100 kg of wood is needed. Here, the efficiency ratio is only 10%-15%.

There is, however, an alternative method available. Known as retort-technology, this is the method used in Europe to manufacture charcoal on an industrial level. These industrial plants are unfortunately impracticable in the rural areas, because the investment and maintenance costs of the process are too high.

After much consideration, and due the widely published positive experience of several welfare organizations with the building of a bio-coal plant in Burundi (East Africa), AIB decided to follow the concept of “adam-retort”, innovative retort-kilns built with locally available materials. We have confidence that the retort-kiln can be, due to its undeniable qualities, widely spread. The retort-kiln was developed according to the principles of ‘intermediate’ or ‘appropriate’ technology.

The Improved Charcoal Production System is a modern, innovative and environment-friendly system to produce charcoal from biomass. Charcoal from retort systems can often serve as a replacement for fossil fuels, thereby having a neutral effect on CO₂ exchanges. This makes a significant positive contribution to the preservation of environment.

The system - ICPS (Improved Charcoal Production System) - has the following advantages:

- Economical, with an efficiency of approx. 35% to 45% instead of about 18% efficiency compared to the traditional systems (calculated from dry weight of wood).
- Recycling and clean combustion of the pyrolysis gas during the 2nd phase of operation ‘retort-system’) results in a low-emission of carbon monoxides during the charcoal production.
- The effective carbonation of the biomass takes only about 10 hours
- Simple construction with locally available materials.
- A volume of approx. 3m³ of biomass (corresponding to approx. 600 to 1,900kg wood, coconut shells, etc.,dry weight- water not counted) can be converted to up to ~500kg of charcoal.
- An effective 24-30 hour production cycle (known as a ‘batch’) and a simple operation of the plant result in an increased income for its operators. The right system to be used in rural areas or semi-industrial production like at forest projects, energy-wood plantations and charcoal makers.
- Only waste and residual biomass needs to be burnt (~50kg) in a separate fire box to dry and heat the wood and initiate the carbonation process.

The concept of the ICPS is that the retort works in 2 stages – the first and the second phase. In the first phase the wood in the retort chamber is dried by hot flue gases and the carbonation is initiated. The hot flue gases are produced with cheap waste wood in an external fire chamber. By waste wood we understand branches, crust, charcoal dust and other residual products from agricultural processes, such as coffee husks. About 50 kg of waste wood is burned per batch.

During traditional charcoal production a part of the ‘good’ wood must be burned down in order to carbonize the rest of the wood.

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As soon as the water in the wood has evaporated, the smoke is sufficiently hot and the first inflammable wood gases appear, the smoke is now rerouted and burnt in the hot fire chamber, reducing pollution. This additional energy is used to heat up the wood chamber and to further accelerate carbonation during this second phase

In the traditional carbonation process, the smoke clouds remain in the air for 4 – 14 days. The smoke created by the ICPS carbonizes within approximately 10 hours with some of the smoke being burnt off in a fire box. If the carbonation begins in the morning, the retort-kiln can be closed by the evening. The charcoal cools overnight by a special cooling method. By the next morning, the charcoal is ready to use. About 3m³ volume, or 1,900 kg of wood can be loaded, from which 400kg-500 kg of charcoal can be created.

A ~75% reduction of environmental damage has been recorded by an English retort manufacturer by burning the methane gases. Wood consumption is reduced by over half, while maintaining the amount of charcoal produced. With the retort-technique charcoal of a high quality is obtained – one extra suggestion has been to market it to the medical sector.

We do not advise the introduction of charcoal as an universal fuel; it is better to burn wood directly. In many countries, however, charcoal use is socially determined, or traditional, as regards specific meals prepared. In areas where this kind of high charcoal consumption takes place, it is more appropriate to produce it with more efficient, more modern and environmentally friendlier methods, such as the ICPS.

5. Overview

5.1. Economical outlook

Current prospectus is developed from economical & marketing prognoses made for the AIB. Those are based presumption of long duration of global crises. Then, the expected ROI is within 10 years (3 years of lumbering). AIB has already ensured entire capital needed to carry on F-Program and more than 15% of estimated necessary investment for Rough timber fabrication program.

Further development is to be financed by share and/or bond issue, secured bank loan or by supplier credit system. Estimated additional costs (mainly interest) of capital outsourcing were already included into internal analysis mentioned above.

As the wood demand recently tends to be predicted as significantly growing in late 2010's (time of lumber), we consider the possibility of sooner ROI very realistic.

Figures of chapter 4 (Bio-waste beneficiation program) are not included into prospectus, while in spite of proven good profitability are those programs considered to be mainly aimed to development of surrounding areas. Expectable revenue resulting from this activities is considered to be used to cover eventual sudden expenses.

5.2. Social beneficiality summary

Primary benefit resulting from AIB's RDP is significant rise of employment rate. For the beginning, F-Program will employ approximately 30 people at nursery and over 400 farmer families will take a part within our joint-venture. Later (since the year Y+5), over 80 additional workers are expected to be employed for lumbering and another at least 90 people for saw-mill (Since Y+4). In supplemental services will probably grow more than 180 work-places. In conclusion, AIB can become major source of income for over 800 families, which can be also expressed as approximately over 4,700 people.

As we are a development company, we pay full attention to co-existence with surrounding environment and communities.

All our projects bear common characteristics, such as extremely wide use of domestic materials, labor and locally available technologies. Our system of management then brings the necessary expertise and quality guarantees.

The massive improvement in life-standard of involved people (employees, subscribers, contractors) is to generate high purchasing power, which in its final, long-range effect ignite rapid social development of entire region.



AGRO INVEST BOHEMIA CORPORATION

Dvory 128, 357 31 Locket, Czech Republic, European Union

Tel.: +420 77 77 25 25 7 ; +420 77 77 25 25 9

E-Mail: vsobota@agroinvestbohemia.com