Though Nyungwe buffer zone concession was awarded to the New Forest Company (NFC) in 2011, the saw milling operations stated in February 2016 with an annual output capacity of 13,000m3 . Capacity is expected to go up to 17,800m3 in 2019, 25,000m3 in 2020 and 33,000m3 in 2021.

The Company, as NFC is popularly known started value addition of products that come from the two saw mills early this year. Talking to the Dispatch magazine, Alex Madhinga, NFC Sawmill Business Manager gave an insight on the new value addition plant the first of its kind in East Africa at Nyanza and how its production output is impacting on Rwanda.

“The company started adding value to the timber from the saw mills early 2018 and of the 13,000 cubic meters of timber produced annually; value is added to 4580 cubic meters at the new facility. The current drying capacity is approximately 7,000 m3 annually. Depending on demand of value added lumber locally and outside the country the company will add more kilns to cutter for this demand ” notes Madhinga.

The company has two saw mills; one located at Kitabi Sector in Nyamagabe District and another at Kamastira in Nyamasheke District, the two sawmills employ approximately 132 workers many of which are people living around the concession zone.

Kiln Drying at Nyanza

When a tree is felled, it contains a large proportion of water / moisture.

Many felled trees have 55 to 65 per cent water content. Seasoning or drying of natural wood is the process through which excess water / moisture is removed, leaving typically 15 per cent water content.

Madhinga says that practically all wood has to be dried in order for it to be utilized effectively. Dried timber shows improved characteristics in tensile strength and weight reduction, and is therefore highly suitable as a building material.

It is also less likely to suffer from attacks by fungi and other organisms. So at Nyanza, the very first value addition is kiln drying.

After the timber leaves the NFC saw mills, it comes straight to Nyanza plant where it is dried using the hot water drying system which is automated. Moisture content is the most important parameter in the wood drying process.

It is defined as a percentage of the mass of the water in relation to the dry wood, assuming all water has been removed. “We then load the timber that is about 55% – 65% moisture content in the Kiln drying chambers and it stays there for four days after which it will have reduced to 15% – 17% moisture content ready to be used for construction and other value additions” says Madhinga.

According to the Sawmill business manager, the facility has two Kilns and each can accommodate 40 – 50 cubic meters of lumber at a given cycle. “The timber is dried according to recipes depending on size and in case of timber meant for secondary cuts that are mainly used for furniture moldings; the standard moisture content is 12% because such furniture requires very dry timber” explains Madhinga.

Advanced microprocessors for a total control of the drying processes

“Our knowledge of drying wood processing is combined with the latest technology, in order to achieve the best quality of wood treatment.

Here we take great care of mechanics and the technicians as well as installation, electro mechanical and electronic management through on-site or remote control software programs” explains Madhinga.

According to Madhinga, the facility has an automatic control device that embodies the beating heart of the wood drying kilns. The effectiveness of the automatism is the most accountable quality factor in wood processing.

“Even out my office, I have full vision of the status of the whole kilning process, and if there happens to be an emergency, am alerted immediately, remember this is a 24hr operation process.

The same system can also be viewed by the suppliers of this new equipment in South Africa” says Madhinga.

Second stage of value addition

So as to produce the best quality timber which is the best and the first of its kind in the country, the value addition department early this year started making plained all round structural timber and mouldings.

Timber value addition starts with proper drying of the timber, this allows for a stable product for use in construction and good quality furniture.

“After drying the wood, we stock it here and use it to make furniture and most other wood based products, because it is less likely to ‘deform’ and ‘warp’. It can be shaped accurately with tools such as planes, saws, routers and hand tools. Adhesives can also be used with seasoned woods” explains Madhinga.

The facility has well trained staff who went through in house and external training offered by the manufacturers of the machinery.

The suppliers are also in constant interactions with our day today running of the department making us capable of providing quality and impeccable services that remain the top priorities of the company.

Wood processing

The value addition department has been equipped with a state of the art six head cutter planning molding machine and is used for longitudinal processing of products in solid wood and is generally the centerpiece of the production facility.

This is where maximum value creation is applied to the work piece and quality and reliability are essential.

Because there was no large-scale commercial wood processing company in Rwanda, the domestic demand for processed wood products remains high and growing; huge imports for wood and wood processed product as well as poor quality product from local pit saws and wood shops currently fill this demand.

According to Madhinga, after the wood is planned by passing it through the six head cutting machine, it is then made into many different materials for both home furniture and other building and construction materials like skating, cornice, cover strip, brandering, tang and groove for ceiling and flooring

Advantages of Kiln drying

Kiln dried lumber is a standard in the lumber industry because dried lumber is generally prepared for manufacture into a finished product.

As most valuable lumber is used within a enclosed environment such as a home or place of business – the lumber must be suitably dried to prevent movement in service.

For example, lumber dried incompletely and then manufactured into flooring will shrink and deform as it gradually loses moisture to the surrounding environment. As any product, timber becomes more valuable as it progresses towards a finished manufacture.

As manufactures of furniture, flooring, and moldings all require lumber which is properly dried, there is increased strength, increased nail holding capacity, increased paint ability and increased resistance to both fungi and insect attack.

The kiln dried timber market is an extensive one. Though the market requires huge volumes of timber in various species, thicknesses, lengths, and widths, the one process which often is necessary in the preparation of any lumber prior to a

manufacturing process is kiln drying.

Made in Rwanda

The NFC value addition department at Nyanza serves as an opportunity in reducing reliance on imported processed wood product for furniture and construction industry and to improve value chain for extractive industry – significant scale up beyond tree chopping and pits sawing and to improve product quality as well as helping Rwanda’s forest products overcome the trade imbalance.

The New Forest Company is focusing mainly on two critical issues among others are the production of diversified value added wood products, such as treated timber, kiln dried sawn wood and graded wood which will ensure durability of wooden structure and increased life of wood in the service, hence reducing pressure from forest ecosystem and reduce reliance on expensive imported wood inputs.

The company also plans on utilization of wood residues waste materials into value added products to provide renewable biomass fuel (industrial charcoal) to near resident and commercial markets, reducing the use of fossil fuels for heating purposes, thereby reducing overall energy costs in an environmental responsible manner.