



Supporting farmers  
for better chocolate

# About the Nestlé Cocoa Plan

The Nestlé Cocoa Plan is only one initiative where quality goes well beyond the products themselves. Throughout the world and across our brands, Nestlé is involved in a broad range of social and environmental initiatives that together make quite a difference.

Actually, it's how we've always done business at Nestlé and is part of what we call 'Creating Shared Value'. For us, caring about the wellbeing of others and the environment is integral to our promise of improving the quality of life through good food and beverages everywhere. Our commitment to great tasting and trusted products has and always will be tied to our respect for the environment and the people we work with, including the farmers who supply us, our employees, our consumers and the communities where we operate. At Nestlé quality means more.

Learn more at [www.nestle.com/csv](http://www.nestle.com/csv)

## **Plant Propagation**

Our Research and Development (R&D) Centre in Tours, France, works with its sister R&D Centre in Abidjan, Côte d'Ivoire as well as a number of other research institutes.

One output of these Nestlé collaborations is in the accelerated propagation process. There is no genetic modification involved. The process starts in our R&D Centre in Tours, France with cocoa tree flower buds that finish up as plantlets in our centre in Abidjan, Côte d'Ivoire, or in Ecuador. Once they've matured in local nurseries, the trees are ready to be planted in the farmers' fields.

Our elite tree initiative is a major highlight of the Nestlé Cocoa Plan. It's already making a lasting positive difference by supplying top quality young trees to farmers that have the potential to deliver 20 years' high yield and quality cocoa beans. In addition, as a result of our free technical assistance, Tours' technology is now being used in other cocoa producing countries, such as Indonesia.

We will be dramatically increasing the quantity of cocoa trees produced for farmers in Côte d'Ivoire by investing in new facilities in Abidjan to propagate a million trees each year from 2013. These facilities will employ local Ivorian people and have close links with the national plant institute CNRA (Centre National Ivoirien de Recherche Agronomique).





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## How to propagate new cocoa plants

As with other plants, there are basically three traditional ways to propagate new cocoa plants. You can use seed, produce rooted cuttings or use grafting. But now it's also possible to use accelerated propagation.

### Seeds

Seeds are good in two respects. They are easy to obtain and produce a tree with a strong, long tap root that helps the tree to survive in periods of drought. They also create trees with a good branch structure or architecture, based on a strong main trunk and what is called a jorquette – the canopy of branches shaped like an umbrella.

However there is one major disadvantage: they are inconsistent. In reality only 10% to 20% of the trees on average will perform at a high level.

### Cuttings

Cuttings, commonly used for plants such as geraniums, do produce cocoa trees that are consistent and uniform, but they usually have no tap root to help them survive during periods of drought. They can also lack good tree structure because they are often derived from branches with a sideways growth.

### Grafting

Grafting, commonly used to propagate roses, is a popular technique to make new cocoa plants, but results in inconsistency and produces a weak tree structure (tending towards bushiness) which can make access and harvesting more difficult.

### Accelerated propagation

Accelerated propagation supersedes these three techniques by providing both strong tap roots and an excellent structure whilst maintaining uniformity of the plant. As a result, it significantly enhances the quality and yield of the cocoa plant.

Nestlé plant experts developed this process to propagate both coffee and cocoa plants. In effect, once you've identified a tree, you can make thousands of identical trees, with no genetic modification.





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## Flower Buds

For coffee the process uses leaves, but for cocoa it uses unopened flower buds to start the process. There's a never-ending source of these buds as cocoa trees flower for about six months of the year.

## Sourcing the buds

These buds, about 4 – 5mm long and 2 – 3mm wide, are sourced from carefully selected trees. We look for those that are high yielding, disease resistant and have the desired flavour potential. After collection, the buds are speedily sent in low-temperature refrigerated transport to our R&D Centre in Tours, France as they need to start the propagation process within three to four days of picking.

## How it works

The propagation process is based on control over environmental conditions especially high humidity, the right temperature and correct amount of light. The process starts in darkness and over time develops to full light. A single bud produces multiple embryos that quickly develop into tiny plantlets, which are transferred into bigger glass containers as they grow.

Once the seedlings are large enough they are moved to the greenhouse where they quickly start their acclimatisation to normal growth conditions, before being shipped to nurseries in cocoa producing countries.

The accelerated propagation process was originally developed by a young Mexican scientist working on his thesis at our Nestlé Research and Development Centre in Tours, France back in 1990. Since then it has been adapted and improved and is now well suited to large-scale propagation. Our facility in Tours is the most advanced of its kind in the world and is currently being expanded to provide even more laboratory and greenhouse space.

The process is also being used in Indonesia where - after a year's training in Tours - an Indonesian research scientist with the Indonesia Coffee Cocoa Research Institute (ICCRI) established a laboratory and started producing plants at the beginning of last year. Using Nestlé technology, the plan is to produce and distribute millions cocoa plantlets using this method over the next few years.

Much of Nestlé's efforts are based around refining and improving the process in order to be even more productive. We are sharing this innovative technology with others around the world.





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## **The benefits of accelerated propagation**

Trees produced by this process have several benefits:

*They bear pods earlier* – just 18 months after planting out in the field.

*They produce higher yields* – reaching their full potential after four or five years, properly looked after and well pruned trees can achieve yields of two tons of cocoa beans per hectare (compared to an average of only 300 to 500 kilos).

*They are more tolerant to drought* - in the 2005 severe drought in Ecuador, unlike other trees, cocoa trees grown by the Nestlé process kept their leaves and survived.

*They have an excellent and uniform tree structure with a strong trunk, tap root and root system and a well-developed canopy* - this makes them easier to manage and gives better accessibility for pruning, spraying and harvesting. All in all, they're more vigorous and robust and react better if disease attacks.

Today at Nestlé we use accelerated propagation to produce our higher quality cocoa trees for farmers in Côte d'Ivoire and other countries. Looking to the future, we're investigating other propagation techniques that will complement this process and help further to increase the impact of this important tree distribution programme.

## **Farmer Field Schools**

Without farmers, there'd be no cocoa. Without cocoa, there'd be no chocolate. Cocoa farmers are the vital start-point and they benefit considerably from our support. The most effective way to help is to get out into the field and demonstrate face-to-face how they can increase their income through higher yields and better quality. That's why farmer training focuses on better farming practices, including pruning trees, pest control and harvesting, as well as caring for the environment.

Nestlé therefore partners with Anader in Cote d'Ivoire among other NGOs to provide farmer training.

One of the ways we help train farmers is by supporting and investing in a programme of farmer field schools in West Africa. At these farmer field schools, between 20 and 30 local farmers get together and meet at a local cocoa farm for their training every two to three weeks.





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The aim of farmer field schools is to help farmers to increase their yield and the quality of their harvest. They're taught responsible working practices and sustainable farming methods.

However there is more to the schools than farmer training. One benefit is that they provide a forum to raise and tackle issues such as child labour, the importance of schooling for children and HIV / AIDS.

Farmer field schools have proven to be very effective and we will continue to contribute to the programme's expansion and roll-out. By doing this, we are committing to buying cocoa from trained farmers and paying a premium for their higher quality cocoa. This benefits farmers and makes the field school programme more viable, helping to secure its long term future and providing beans that are better quality and more traceable.

## **The training**

Farmer field schools include many subjects, from pruning and pest management to post-harvest practices such as fermentation and drying; from child labour and environmental issues to commercially selling their beans. To give you an idea of the relevance and benefits of this training, we've expanded on three examples:

### **Pruning**

To save time and money, some farmers let their trees grow too tall. But it's a false economy because it makes harvesting more time-consuming and difficult. In the farmer field schools they're shown how to limit the height of the trees by correct pruning, which increases the harvest. To add credibility to the theory, the schools have "test" and "control" patches of land side-by-side so that the farmers can see the difference and experience for themselves how much easier it is to pick the pods. This "proof of the pudding" approach is fundamental to all field school activities as it convincingly demonstrates to farmers how they can benefit.

### **Drying**

Farmers are also shown how to dry cocoa beans more effectively. Properly dried beans need to have their humidity content reduced to about 8% which can take several days. Rather than simply leaving them on the ground, they're shown how much better it is to dry them on raised mats, away from contamination. It encourages more even drying and minimises spoilage.





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## **Pesticides**

Cocoa trees are attacked by insects, fungi and other diseases, all of which have a direct effect on the tree's yield. These threats to the small, fragile cocoa tree need to be managed. Pesticides are a last resort but are often necessary. The field schools teach farmers how to use them in a responsible manner – one which doesn't harm the environment or the people applying them and is safe for the cocoa itself. The schools also teach 'Integrated Pest Management'. This minimises the need for pesticides in the first place and controls pests while not harming the beneficial insects that pollinate the trees or attack other harmful ones. However, the best way to reduce the use of pesticides is to develop stronger plants that are less vulnerable to disease.

## **Bean to Bar**

The journey from the cocoa bean to the chocolate you enjoy today is typically long and complex. In Côte d'Ivoire for example, it starts with the farmer, who sells his crop either to a cooperative or a pisteur. There are about 700 cooperatives in the country and around 5,000 independent pisteurs. These are roving buyers/salesmen who call on farmers to buy as much cocoa as they can. They're called pisteurs because they go up and down the pistes or rough tracks which lead to the cocoa villages.

The cooperatives and pisteurs sell to larger middlemen called traitants, who in turn sell to exporters, who sell to traders who sell to processors. Quite a journey, as you can see! Yet, each role plays its part in moving, conditioning, grouping or bagging cocoa. However, too many links in the chain can mean that the farmer isn't paid sufficiently. It can also make it difficult to know exactly where the cocoa is coming from, which in turn makes it difficult to track back to the farmers so that they can be appropriately trained and encouraged to improve their farming practices and the quality of the beans.

The beans from many different trees and farms are then combined and increasingly larger quantities are sold from one buyer to the next until the beans reach the shipping port. Here, beans from literally thousands of villages are combined into large shipments to countries across the world.

## **Better Social Conditions**

In the last decade, while there have been positive changes and evidence of increased farmer income, improved educational opportunities, and fewer children exposed to unsafe farming tasks, labour practices on cocoa farms still remain an issue of considerable concern. Too many children are involved in hazardous farming tasks or work on farms instead of going to school.





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The United Nations International Labour Organisation estimates that 132 million children aged 5 to 14 work in agriculture around the world, in many cases out of sheer economic necessity. What is acceptable and prohibited is guided by a number of internationally agreed conventions, notably Convention 182 on the worst forms of child labour and Convention 138 on the minimum age for work.

There are very few commercially managed cocoa farms, and most small-holder farmers continue to use traditional farming methods. All of the work preparing the land, planting the trees, maintenance, harvesting, fermenting and drying is done manually. Cocoa farming is therefore very labour intensive. This is good in terms of providing job opportunities in rural areas, so long as the work is fairly paid and carried out in proper conditions without exploitation.

Farmers need help at key times during the growing season and for most farmers their family is the main or only source of labour. In poor communities, for example in West Africa, there is real pressure to keep costs down in order to maintain income levels. At peak times, all family members are generally involved.

## **What exactly is child labour?**

Not all work done by children is classified as child labour. Children's involvement in tasks that do not affect their health and personal development, or interfere with their schooling, is not prohibited. While children helping out can have positive benefits for them and their families, measures need to be taken to ensure this work is not hazardous and does not interfere with school opportunities.

Traditionally, children have always helped out on the family cocoa farm, much as they do in other countries or for other crops. However it is recognised that without effective awareness and education, children often work in hazardous conditions: spraying pesticides, applying fertilizers or sowing and harvesting crops. Support for eliminating these hazards needs to go hand-in-hand with respect for beneficial local customs in producing countries. For example, older children's participation is seen as an essential way for them to learn farming practices so that they might eventually take over responsibility for the farm as part of their own livelihood. Having the family help on the farm is not prohibited by law, but there are situations of children carrying out unsafe tasks, using dangerous tools, carrying loads that are too heavy, suffering injuries and missing out on schooling.

Some producers are also known to seek cheap labour by illegally using forced child or adult labour. When children are taken from their families, even with their consent or with their parents' consent, and sent away from their homes - sometimes to another region or country - for the purpose of exploitation, this is known as trafficking and is illegal. Adult "forced or compulsory labour", as described by the ILO convention 29, refers to "all work or service, which is exacted from any person under the menace of any penalty and for which the said person has not offered himself voluntarily", and is also illegal.





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It is generally acknowledged that the causes of child labour are complex, including poverty, differing stages of economic development, social values and cultural circumstances. It's impossible for any one organisation to tackle these issues alone, and eventual elimination will take time, but progress is being made. The governments of Côte d'Ivoire and Ghana, for example, have national plans to improve cocoa farming practices. These also address the use of forced and child labour.

Nestlé is a founding participant in the International Cocoa Initiative (ICI), an independent foundation set up in 2002 and dedicated to ending child and forced labour in cocoa growing, and eliminating child trafficking and abusive labour practices. The ICI, a unique partnership among civil society and cocoa industry, works to ensure that children are not exposed to unsafe tasks, helps children that are exploited and improves their access to education.

ICI regularly communicates and updates results of its industry-funded programmes, showing annual progress. Visit [www.cocoainitiative.org](http://www.cocoainitiative.org) for further information.

