

# Towards Optimizing Smallholders' Yield and Productivity through Adoption of Appropriate Latex Harvesting Technology

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### Summary

In the global rubber industry, yield gaps between rubber smallholdings and rubber agro-industries are important. These gaps are important regarding land productivity (kg/ha) and even more important regarding labor productivity (kg/tapper/day). However, technical packages of GAP (good agricultural practices) and BMP (best management practices) are available from decades of research in breeding, physiology, agronomy, crop protection and latex harvesting technology. Regarding latex harvesting, the differences between agro-industries and smallholdings are very often even more important than for other disciplines: reduced tapping frequencies compensated by accurate stimulation intensities or controlled upward tapping are scarcely encountered in smallholdings, tapping quality standards are often not respected, regarding bark consumptions, bark wounding, homogenous panel management... conversely to agro-industries. The bottlenecks to introduction of the latex harvesting GAP are multiple. Among them, psychological factors based on fear and risk management and educational factors due to a certain lack of training of smallholders on the parameters accounting for latex production and productivity (tapping quality, opening norms and panel management...). Smallholders are very (too) often on their own during the mature period, from the moment tapping starts. This is rather surprising as the risk is high of non-reversible mistakes during tapping, with non-reversible consequences on the plantation further yields. All efforts granted and services provided during the immature period can then be quickly and easily annihilated by a bad tapping quality or wrong tapping practices. This makes also the latex harvesting GAP and innovations particularly difficult to take on board by the smallholders, because of a rather limited possibility of transfer of technology (TOT). Some other factors are structural: for instance, small size of farms may prevent the possible introduction of reduced tapping frequencies when the tapping taskforce cannot be shared and mutualized among different owners. In latex harvesting, GAP introduction therefore requires to emphasize education and training of smallholders/tappers, so that they can know the possible technical packages that can help them to achieve higher productivity. This supposes that trainers in charge of TOT are themselves updated on the technologies to be transferred. TOT requires as well as to set up demonstration plots or experiments, on-farm and with a participative approach, in candidate leader smallholders farms accepting to test the possible innovations and GAP, so that "everybody can see the results" and afterwards take them on board in a spontaneous manner ("If it good for my neighbor, it should be good for me as well"). This communication presents the Cirad experience on this subject.

### Key words

Transfer of technology (TOT), Smallholders, Extension services, Training, Good agricultural practices (GAP), Best management practices (BMP), Tapping, Latex harvesting, Demonstration plots.