



**Intensify small areas with multiple layers of high-value products: agroforestry systems with fruits and vegetable productions.**

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The SMART project in France identified 130 farms using pioneer highly diverse agroforestry systems for vegetable production and followed standardized technical and economic indicators on 22 of these farms from the year 2014 to 2017. The main objective was to understand better why these innovating farmers created these systems, how did they think their design, and evaluate their performance on various indicators (satisfaction, investment, workload, revenues, biodiversity, yields...). This project has been undertaken by 16 technical partners across France.

The size of the farms is generally small and only constituted of the agroforestry plot's of around 0,5 hectare. The designs used are based on rows of fruit trees with patches of vegetables between the rows, with hedges circling the plot. Spacing between the tree rows was 8 meters up to 20 meters.

Crop diversification does not lead to a significant increase in the workload, however due to complexity in the day-to-day management, thoughtful priorities at system level is necessary. Work drudgery and negative effects of climate are reduced by the inclusion of complementary trees and crop varieties. Tree rows positioned with an adequate width is important for cultivating and harvesting different crops.

In the SMART study only 19% of farmers considered their income as "sufficient", however this low figure mainly comes from the fact that most systems studied were still quite new: 50% had been planted less than 3 years before, and were therefore still not fully productive. It is also important to understand it is difficult to quantify the real value of the additional environmental services that these diverse systems provide to human, soil health and biodiversity.

Crop diversification is seen as a great advantage on commercialization. Overall, the great majority of the farmers surveyed (more than 70%) would recommend association of fruits and vegetables on the same plot to new and existing farms, underlining strongly the satisfaction that it brings.

For more information:

Videos of French farmers using agroforestry schemes (French):

<https://www.youtube.com/channel/UC9GGNGApjud1NrcpEAmXgGw>

Best practices handbook for a mixed agroforestry system (French):

[http://www.grab.fr/wp-content/uploads/2017/09/guide\\_verger-maraicher\\_smart\\_GRAB\\_web-1.pdf](http://www.grab.fr/wp-content/uploads/2017/09/guide_verger-maraicher_smart_GRAB_web-1.pdf)



Figure 1. Agroforestry system with fruit trees and vegetables, France. Credits: Yohan Caubet

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