CASE STUDY 2.9 The Establishment of an Inter-Ministerial Committee to Control *Miconia calvescens* and Other Invasive Species in French Polynesia

In August 1997, the Délégation à la Recherche (= Department of Research, under the authority of the Ministry of Health and Research, Government of French Polynesia) organized the "First Regional Conference on Miconia Control" in Papeete, Tahiti, on the initiative of the scientist in charge of the *M. calvescens* control and research programme since 1992 (Dr. Jean-Yves Meyer). Biologists and managers from Australia, Fiji, France, French Polynesia and Hawaii (USA) attended this free public conference whose main goal was to assess the past and current efforts to control *M. calvescens*, an alien tree considered as the most aggressive invader in the native wet forests of Hawaii and French Polynesia. During the meeting final discussion, the need for strengthened collaboration between governmental departments in French Polynesia was emphasized, and the creation of an inter-ministerial committee in charge of the co-ordination of the *M. calvescens* control efforts was proposed.

An "Inter-Ministerial Technical Committee to Control Miconia and Other Invasive Plant Species Threatening the Biodiversity of French Polynesia" was officially created one year later (Decree N°1151 CM, voted by the Council of Ministers in August 1998). This important institutional step for the management of biological invasions in French Polynesia was made possible thanks to existing legislation on nature protection in this French overseas territory (Law N°95-257 AT, voted by the Territorial Assembly in December 1995). The committee, chaired by the Minister of Environment (or his representative) is assisted by the scientist in charge of the research programme on invasive plants in French Polynesia. It is composed of the governmental agencies which are actively or potentially involved in the prevention and the control of introduced plant species: la Délégation à l'Environnement (Dept. of Environment), la Délégation à la Recherche (Dept. of Research), le Service du Développement Rural (Dept. of Agriculture), la Direction de l'Equipement (Dept. of Equipment); le Service de l'Administration et du Développement des Archipels (Dept. of Administration and Development of the Archipelagos) and le Service du Tourisme (Dept. of Tourism). The committee members (head of each department or his/her representative) meet once a month, and can invite other non-governmental participants chosen because of their relevance to the action plans (e.g. research scientists, school directors, French Army representatives, nature protection groups).

The main goals of the committee are: (1) to define short- and long-term control/management strategies; (2) to find suitable human and material means, including adequate funding; (3) to set up priorities concerning public information, education, research and regulation texts. The committee has also started to address alien animal species. Action plans defined by the committee are submitted for approval to the Council of Ministers. Some relevant results of this committee include:

➤ A list of 13 dominant invasive plant species legally declared a threat to the biodiversity of French Polynesia (Decree N°244 CM, February 1998). New introductions, propagation, cultivation, and transportation between islands are strictly forbidden, and destruction is authorized. A leaflet describing these species, and including other potential plant invaders, was prepared in 1999.

➤ The organization and funding of one-week *M. calvescens* control campaigns on the island of Raiatea in June 1999 and in June 2000, with the participation of 90 soldiers of the French Army led on the field by the forestry section of the Department of Agriculture.

The inter-ministerial committee has managed to bring different agencies together for joint action to prevent, contain and eradicate plant (and animal) invasions, thus enhancing considerably the conservation efforts in French Polynesia.

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CASE STUDY 4.6 Public Awareness and Early Detection of *Miconia calvescens* in French Polynesia

Since the recognition by local authorities (French Polynesian Government and French High Commission) of the severity of the invasion by *Miconia calvescens* on the islands of Tahiti and Moorea (French Polynesia) (cf. Case Study 2.6), an *M. calvescens* research and control programme started in 1988.

Three information and education posters ("Le Cancer Vert" in 1989, "Danger Miconia" in 1991 and "Halte au Miconia" in 1993) were published by the Department of Environment and widely distributed to all 35 high volcanic islands of French Polynesia susceptible to invasion. Each year, researchers displayed an information board on the *M. calvescens* programme during popular events in the town of Papeete, Tahiti ("Environmental Day" in June, " Agricultural Fair" in July, "Science Festival" in October).

Active manual and chemical control operations started in 1991 in the newly invaded island of Raiatea, where the Rural Development Service discovered small infected areas in 1989. By now, 6 annual campaigns have been organized in Raiatea with the help of hundred of schoolchildren, nature protection groups and the French Army. The 5-days campaigns were publicized in local newspapers, by radio and above all on a local TV channel (RFO 1 which is watched in all the inhabited islands of French Polynesia) during the television news in both French and Tahitian languages.

As a direct result, a small population of *M calvescens* was found and reported in 1995 by a pig hunter in a remote valley on the island of Tahaa, and local inhabitants noticed *M. calvescens* seedlings on the island of Huahine. In June 1997, during a botanical exploration in the Marquesas Islands conducted by the Research Department and the National Tropical Botanical Garden (Hawaii), a small population was discovered and destroyed on Nuku Hiva. Once again, an article was published in the local newspapers and a talk was made on local radio stations (including the Marquesan radio).

During the 4 days of the first Regional Conference on *Miconia* Control held in Papeete, Tahiti in August 1997, local TV, newspapers and radio have been again highly involved. As a result, more isolated plants were found and reported in the remote islands of Rurutu and Rapa (Austral archipelago) and Fatu Hiva (Marquesas archipelago) and immediately destroyed by the Department of Agriculture.

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CASE STUDY 3.11 Long-distance Spread of *Miconia calvescens* to Remote Islands of French Polynesia

The alien tree *Miconia calvescens* is a dominant plant invader on the tropical islands of Tahiti, Moorea and Raiatea (Society Islands) where it was intentionally introduced as an ornamental plant. Amongst the biological characteristics explaining the striking success of this invasive species is a large soil seed bank (up to 50,000 seeds per square metre) and the ability of the seeds to remain viable in the ground for at least six years.

Despite an active research and information programme to control *M. calvescens* (see Case Study 4.6 "Public Awareness and Early Detection of *Miconia calvescens* in French Polynesia"), *M. calvescens* seedlings were recently discovered in remote islands of French Polynesia, 700-1400 km from the Society Islands. Isolated *M. calvescens* plants were found on Rurutu and Rapa (Austral Islands) near water-tanks (reservoirs) built with gravel and soil imported from Tahiti; small populations of *M. calvescens* seedlings were spotted in Nuku Hiva and Fatu Hiva (Marquesas) in 1997, on road sides and in gulches below where road works were carried out using bulldozers from Tahiti; in 1990 *M. calvescens* seedlings were found on Huahine (Society Islands) in the Fare Harbour, growing on a pile of imported gravel and soil.

Accidental introduction of *M. calvescens* through the transportation of contaminated gravel and soil and dirty machinery (bulldozers, tractors) for construction works, is now considered to be the main cause of *M. calvescens* long-distance spread in French Polynesia. In 1999, as recommended by the Inter-Ministerial Committee to Control Miconia and other invasive plants (a committee created in 1998), the Government of French Polynesia and the High-Commissioner of France wrote official letters to contractors for public works, requesting them to clean their vehicles as a quarantine strategy before landing on remote islands

Transportation of potted plants between islands is strictly forbidden in French Polynesia, but illegal introduction of potted plants, which may contain *M. calvescens* infected soil, still occurs. The dispersal of *M. calvescens* by local pig-hunters or by foreign tourists (especially mountain hikers, and biologists!) with muddy shoes coming from Tahiti and Moorea may also be a threat to the remote - and still pristine - high volcanic islands of French Polynesia.

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