



Coconut Risk Management and Mitigation Manual for the Pacific Region



Compiled by R. Bourdeix, J. M. Sourisseau and J. Lin Suva, December, 2021



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5. ANNEXES

A. RESULTS OF THE ONLINE SURVEY

By R. Bourdeix and J. M. Sourisseau

As of 9 August 2018, 49 significant replies where obtained. Respondents are located in 26 different countries or territories: India (10 respondents), Australia and Indonesia (4 in each), Malaysia (3), French Polynesia, Papua New Guinea, Philippines, Tanzania, Tonga, Vanuatu (2 in each), and one reply for each of the following countries: Brazil, Benin, Côte d'Ivoire, England, Fiji, Hawai'i, Kenya, Nicaragua, Nigeria, Pakistan, Samoa, Seychelles, Solomon Islands, Sri Lanka, Thailand and Vietnam.





The sampling is not statistically representative, but the objective is to capture a diversity of the main focuses of people directly involved in the value chains, and inside a dedicated network. Responses came back from 24 different countries, with an over-representation of India (10). The respondents find it difficult to identify themselves in one single occupation. sixteen of 50 consider themselves as multistakeholders, involved in farming and trade, or in research and farming, or in farming and policy making. Indeed, this situation illustrates the high level of integration of coconut value chain segments. This is a strength, but it may also be a weakness in governing and coordinating the processes.

Finally, as shown in Plate 23, regarding their main occupation, our 'sample' over represents researchers and farmers.

Analysis of replies regarding incentives

We defined a typology using a two-step process. A first typology was drafted by evaluating all the replies. Second, we refined the typology during the analysis of the individual replies. We finally defined 11 categories.

Some of the replies went out through the typology. For instance, for the second incentive, the reply 'Major national effort in getting the right cultivars into large scale nurseries. Mapping out the correct land for these to be planted in' added a value of one to both the categories 'planting material' and 'Land'.

We conducted twice the repartition of suggested incentives in categories, and we chose the average (highest entire value) of the two notations. We calculated for each category a total (sum of the values obtained as first, second, and third incentives) and a pondered total (first

prioritized incentive counted as 3, second as two, and third as one). The categories were classified according to the pondered total, as shown in table 4.

The most favoured incentives were those related to planting material (both in total and pondered total); then 'Securing farmer's income"; 'Land and landscape for coconut cultivation"; 'National policies", and 'Diversification for higher value of coconut products".

Categories			riorit	ty	Total	Pon-
		1	2	3		dered total
1	Good planting material for farmers	18	9	4	31	76
2	Securing farmer's income			4	19	44
3	Land and landscape for coconut cultivation			3	19	43
4	National policies			10	23	39
5	Diversification for higher value of coconut product			8	21	39
6	Professionalizing coconut producers and their organizations.	4	5	3	12	25
7	Good cultivation practices	3	4	7	14	24
8	Pests and diseases	4	2	2	8	18
9	Processing from farm to consumers			3	9	17
10	International policies	1	3	5	9	14
11	Reducing cost of product transportation	0	1	1	2	3
Total	Total			50	167	342

Table 4.

Categorization and prioritization of suggested incentives from the online CIDP survey.

Table 5. Rationale for incentives typology in link with individual replies.

	Categories	Notes on individual incentives proposals
1	Good planting material for farmers	Free of charge seedlings; provide quality planting material adapted to each region; Train farmers to harvest and prepare themselves best planting material; Diversify the genetic base of planting material; More nurseries; promote hybrids; promote local varieties; use molecular approach to improve breeding techniques; Government to support public and/or private coconut breeding programs and gene banks; While maintaining bio security, to simplify import and export of planting material.
2	Securing farmer's income	Stabilize the selling prices; secured local and international market; Minimum price guaranteed even in situation of oversupply; Insurance against low prices. Special incentives for insulated and marginal farmers.
3	Land and landscape for coconut cultivation	Devote more and more suitable land for coconut cultivation; Subsidies for land preparation; policy for identification and reservation of most adapted land to coconut cultivation; Land distribution to coconut farmers; Comprehensive program from leasing the land; prioritize and help replanting senile plantations; segmenting the coconut communities within each region for targeted specific products.
4	National policies	Increase communication between private and public sector and organize better sharing of investments in coconut value chain; promote interdependence among the producers and processors- Legislate that processors must offer shareholding in the company to farmers; promote cooperative farming; license approved buyers/collectors to cut down the middle man; promote local market for value-added products, revive local consumption; segmenting the coconut communities within each region for targeted specific products; labelling coconut products; recruit competent agricultural and extension officers working exclusively on coconut; Organize access to financing and micro financing; governments to recognize publicize the value of coconut farming and the ease of cultivation after the planting phase.
5	Diversification for higher value of coconut product	Develop the use of by-products (husk and shell) for copra producers; develop other products than copra and oil; Market germinated coconut as source of essential fatty acid for preventing human diseases; promote coconut chips that remains a untapped potential, as snacking is a global habit amongst all age groups; providing awareness to the farmers on selling stem and husk for firewood; provide a better access of farmers to market for high value coconut

	Categories	Notes on individual incentives proposals
		product; training on improved techniques in processing and marketing; provision of processing equipment for Small and Medium scale enterprises with start-up capital.
6	Professionalizing farmers and their organizations.	Help farmers increase the productivity of their plantation; facilitate adoption of innovative techniques; cooperative farming to reduce the disadvantages of small plantations; educate the farmers; rehabilitation incentives for low productivity farm; promote existing harvesting equipment such as coconut sickle or coconut climbing machines: organize contests between coconut growers with big prices funded by the government; create demonstrations sites.
7	Good cultivation practices	Shift to organic cultivation; promote intercropping; promote irrigation; subsidy in fertilizers– Promote organic fertilization; promote the use of cover crop; well planned bonus schemes, from land clearing, proper spacing, intercropping, then pay farmers after a 2 to 3 year period.
8	Pests and diseases	Develop biological control; teach farmers to locate and destroy Oryctes breeding sites; molecular markers for pathogen studies; incentives for farmers to cut diseased palms and replace them with improved varieties; subsidies in pesticides and insecticides.
9	Processing from farm to consumers	Improve the processes of preparation and storage of high value coconut products; post harvest management; develop end to end cold chain for coconut water; assist with processing equipment for virgin coconut oil; developing automation of coconut nectar (toddy) extraction; set up small/medium integrated value added coconut product processing.
10	International policies	Increase international cooperation in coconut research; produce training manuals; long term loan with technology support to push quality products to market; communicate with national health authorities about healthy value of coconut product; increase links between coconut growers, scientists, processors, the states and the consumer market.
11	Reducing cost of product transportation	Support logistics for freight of coconut products.

Analysis of replies regarding risks

Adding the 3 levels of risks all together, the respondents raise 148 propositions. The most cited items are price and marketing issues (30), genetic and replanting (26), policy and coordination (23), and pest and diseases (21).



Plate 24. Type of risks and constraints (total).

Price volatility and market failure are real concerns when anticipation is quite impossible and when farmers depend too much on coconut activity. But only half of answers on marketing are effective risks, i.e., markets' failure. The second half concerns the economic under valuation of coconuts' basic products. One can understand that to prevent from markets' uncertainties, farmers and their organizations may change their strategy toward more value-added products (art craft, high quality water and milk, etc.).

In the same vein, the old age of trees is a real concern because it exposes the plantation to climate events and diseases but cannot be considered as a risk in itself. Therefore, replanting good varieties in shorter intervals appears to be necessary to both improve performances and resilience. The issue should be studied further, but even if the respondents didn't mention it, rustic low yield variety may have, in the contrary, a positive effect on climate and diseases' prevention. It seems that the necessity to close the yield gap (with genetic improvement) overdetermines to researchers and farmers priorities. The lack of adequate and massive policies is also a constraint that exposes to financial and environmental risks. The respondents claim for yield improvement, market protection and quality improvement (to get higher prices) to raise farmers' incomes and resilience. But the lack of coordination of the different actors along the value-chains is considered as important and policy failure. The fourth more cited item is typically an agronomic risk. Pests and diseases remain as a major threat, and have large occurrences, with dramatic consequences on production and farmers' incomes and livelihood.

Policy and coordination issues reflect both constraints rather than risks. Some items refer to risks of failures along the value chain. For instance, when a processer is not able to make the job, the consequence may be a commercial lost for the producer. But these risks are not often mentioned. Most of the occurrences refer to structural dysfunctions in commercial or logistic coordination, and in policies implementation. Once again, the survey insists on the weak

incentives offered by coconut production economic environment and on the lack of infrastructure (due to policy failure). These weaknesses result in producers' high vulnerability to market failure, climatic events and pests and diseases sudden attacks, which remains the 3 main categories risks quoted by the respondents. Pest and disease risks are more precisely described and documented, even if they represent only 14% of the total propositions. It's quite surprising that climate risks count for only 10 occurrences among the 148 responses.

As shown in Plate 25, when crossing respondents' jobs and the nature of constraints and risks declarations, it's interesting to notice that farmers' declarations are the most diversified. This result may reflect the wide diversity of producers, regarding agronomic, economic and organizational conditions. Traders have a clear focus on price and marketing issue, which seems quite natural, but are also conscious of the economic consequences of the age of the plantation and of policy and coordination failures.





Another result that calls for further investigation is the focus of policy makers on labour and land issues. Perhaps it's because they feel they can play on these two factors through laws, regulations and incentives, when the other constraints and risks are out of their field of action. Researchers' responses are also diversified, but one could have expected a greater focus on pests and diseases and on the lack of knowledge of the farmers. These two items count only for 3 and 5 of researchers' 20 first choice, against 6 for price and marketing.

As shown in Plate 26, the prioritization of the risks and constraints gives, for the whole sample, the priority to the risks related to genetics or replanting, before prices and marketing constraints, and only in third position, the pests and diseases. The distribution of answers for the second choice is relatively close to the first priority ranking. On the other hand, it is only at the level of the third choice that the constraints and risks regarding policies and coordination become significant.



Plate 26. Prioritization of the risks and constraints.

The climate, yet emblematic of the risks in this region of the world, and strongly put in front in international medias, is only rarely mentioned, whatever the level of prioritization.