

## **PREFACE**

The study “**Evaluation of Coconut Palm Insurance Scheme (CPIS)**” is an outcome of a short term project funded by the Coconut Development Board. The study has been organized in such a way to incorporate the overall as well as regional features of Coconut Palm Insurance Scheme and its various aspects of effectiveness, shortcomings, etc with the aid of sample survey among the southern states of India. The report has been organized in four chapters. Chapter I deals with introduction, statement of the problem, an overview of CPIS, objectives and methodology of the study. Chapter II throws light on the demographic profile of growers and their perception about the CPIS. A SWOT framework for CPIS is attempted in Chapter III. Chapter IV gives a brief conclusion.

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# Chapter I

## INTRODUCTION

*“Insurance is a form of risk management used to hedge against a contingent loss. The conventional definition is the equitable transfer of a risk of loss from one entity to another in exchange for a premium or a guaranteed and quantifiable small loss to prevent a large and possibly devastating loss”*

Ramiro Iturrioz  
Senior Agricultural Insurance Specialist  
World Bank

Agriculture continues to be a significant aspect of the economy and the economic life of India as the case was in the past. It has been realized that the success of economic planning in India largely depends on the growth of agricultural sector as evidenced by the fact that it has been accorded the highest priority since independence. Though agricultural production in the country has reached considerable height of self sufficiency after the Green Revolution, it is still dependent on nature pointing to the nature of instability consequent to the unstable climate. This is again evident from the ups and downs in dry land agricultural production over the years.

Though the inherent instability of the agricultural sector cannot be completely eliminated, its adverse effects can be reduced through effective measures. Strategies like tax remissions, waiving off loans and/or interest on loans, drought or flood relief measures are employed by the state and central governments to cop up with the instability in agriculture. However, these mechanisms are largely based on the policy decisions of the concerned government from time to time and as a result the farmers have to wait endlessly to get what they truly deserve. Besides, the inadequate public finance often fails to deliver effective services to the farmers. All these have resulted in the state mechanism to resort to insurance of crops.

Insurance is the most practical means to brazen out risks and hazards in the agricultural sector and to protect the cultivators. Agricultural insurance schemes bring about welfare of the farmers and stabilize agricultural performance. In the case of India, agriculture production and farm incomes are frequently affected by natural disasters such as droughts, floods, cyclones, storms, landslides and earthquakes. Susceptibility of agriculture to these disasters is compounded by the outbreak of epidemics and man-made disasters such as fire, sale of spurious seeds, fertilizers and

pesticides, price crashes etc. All these events severely affect farmers through loss in production and farm income, and they are beyond the control of the farmers. With the growing commercialization of agriculture, the magnitude of loss due to unfavorable eventualities is increasing. So the provision for providing crop insurance for farmers is highly recommended.

## **1.1 Insurance**

Insurance as a “social device which aims at reducing the uncertainty of loss through combination of a large number of similar uncertainties and through the use of accumulated funds, distributing the burden at loss, should there be any over space and time” (Ray, 1960). It is the transfer of risk between the insured and the insurer at a cost which reduces the intensity of loss that would have otherwise been suffered by the insured. Insurance both reduces the uncertainty faced by the insured, and evens out the burden of a loss especially if the loss is of a large scale one.

### **1.1.1 Agricultural Crop Insurance**

Agricultural insurance is reemerging as a topic of interest to farmers, policy makers, insurance companies, and development finance institutions all over the world. Agricultural insurance is presented as important financial risk management tool but not as a panacea for unprofitable farms, management failures, underinvestment in public infrastructure, or compensation for other poorly functioning factor markets. Insurance of crops is regarded as an essential part of a well rounded agricultural programme designed to provide protection to farmers against physical failure of crops due to weather and other unavoidable natural hazards.

Agricultural enterprises face other types of risks that can affect the profitability and viability, namely: **price or market risk** referring to uncertainties about prices producers will receive for commodities or prices they must pay for inputs; **asset risk** referring to the potential loss or damage to physical buildings, equipment, vehicles, and implements due to fire, theft, water damage, or accidents; **institutional risk** referring to unexpected changes in government regulations governing taxes; environmental protection, employment rules, workplace conditions, price or income supports, repatriation of profits, support payments, other subsidies, property confiscation, and the like; **operational risk**, referring to uncertainties in scheduling or using equipment at critical times, making or receiving shipments of critical inputs/outputs, and handling of labor disputes; **financial risk**, referring to rising costs of capital, exchange rate

movements, insufficient liquidity to meet liabilities, loss of equity, and the prospect of loans being called by lenders; **personal risk**, refers to uncertainties and risks connected to health and personal relations such as accidents, illness, death, and divorce.

Frequency of natural disasters and estimated economic losses emerging out of it is a matter of concern in the case of agriculture crops. It has been mentioned by various agencies that the very fluctuations in the weather pattern could result serious fluctuations in the returns from agriculture crops. By the year 2050, the United Nations estimates that natural disasters will cost 300,000 lives and approximately \$250 billion in economic losses per year worldwide, if more measures are not taken to mitigate risks and reduce global warming (UNISDR, 2002).

Crop insurance advances the process of stabilizing the agricultural industry to a stage of production, making such a process more comprehensive, effective and useful. The principal benefits derived from crop insurance are as follows:

- a. Crop insurance prevents farmers from financial disaster due to crop failure through its indemnity function,
- b. It improves the position of farmers in relation to agricultural credit. As crop insurance guarantees protection against crop failure, the insured farmers have a better credit rating, when a loan is provided to them. It also considerably strengthens the financial position of the involved agricultural cooperative credit institutions,
- c. The crop insurance scheme, besides stabilizing farmers income by indemnifying them for damage to their crops, plays a positive role of increasing productivity through prevention and limitation of the operation of natural calamities especially plant pests and disease infections and
- d. Crop insurance contributes to greater stability of the economy by spreading economic damage resulting from crop losses over time and space. Crop insurance, though is relatively a new concept, it has been recognized both in developing as well as developed countries as one of the available mechanisms which provides the farmers with some relief for the purpose of re-investment in the future. It not only provides protection and also safeguards the interest of the farmers in general, but also helps in ensuring the well being of the small and marginal farmers in particular.

Therefore agricultural insurance is one method by which farmers can stabilize farm income and investment and guard against disastrous effect of losses due to natural hazards or low market prices. Crop insurance not only stabilizes the farm income but also helps the farmers to initiate production activity after a bad agricultural year. It also cushions the shock of crop losses by providing farmers with a minimum amount of protection. There are two major categories of agricultural insurance: single and multi-peril coverage. Single peril coverage offers protection from single hazard while multiple perils provide protection from several hazards. In India, multi-peril crop insurance programme is being implemented, considering the overwhelming impact of nature on agricultural output and its disastrous consequences on the society, in general, and farmers, in particular.

Farming or crop production being a biological process, converting input into output carries the greatest risk in farming. This, coupled with market risk, interrupts the profits expected from farming. Efficient risk reducing and loss management strategies such as crop insurance would enable the farmers to take substantial risks without being exposed to hardship. Access to formal risk reducing mechanisms will induce farmers to maximize returns through adoption of riskier options. Investment in development of groundwater, purchase of exotic breeds for dairy etc will be encouraged due to insurability of the investment. This will help the individual to augment and increase the farm income and at the same time help to expand aggregate production in the country. The benefits of crop insurance vary depending on the nature and extent of protection provided by the scheme.

Crop insurance is based on the principle of large numbers and therefore the risk is distributed across space and time. The losses suffered by farmers in a particular locality are borne by farmers in other areas or the reserves accumulated through premiums in good years can be used to pay the indemnities. Thus, a good crop insurance programme combines both self as well as mutual help principle. Crop insurance brings in security and stability in farm income. Crop insurance protects farmers' investment in crop production and thus improves their risk bearing capacity. Crop insurance facilitates adoption of improved technologies, encourages higher investment resulting in higher agricultural production.

Crop insurance also helps farmers escape from the hands of private money lenders as majority of the farmers depends on private money lenders for credit because of easy availability and procedures even though at exorbitant rates when compared to institutional agencies which

ultimately results in defaulting and mounting debt burden. In the case of providing crop insurance farmers do not have to seek loans from private moneylenders. The farmer does not have to go for distress sale of his produce to repay private debts. Credit insurance ensures repayment of credit, which helps in maintaining the viability of formal credit institutions. The government is relieved from large expenditures incurred for writing-off agricultural loans, providing relief and distress loans etc., in the case of crop failure. Thus it protects the interest of farmers in a very significant way as access and availability of insurance, changes the attitude of the farmer and induces him to take decisions which, otherwise, would not have taken due to aversion to risk.

## **1.2 Crop Insurance**

Crop insurance has been an important policy measure which has gained the attention of policy makers in India since independence. Various studies regarding the modalities of the crop insurance programme were carried out since 1947. In 1965, the Central Government introduced a Crop Insurance Bill and circulated a model scheme of crop insurance on compulsory basis to constituent state governments for their views. The bill provided for the Central Government framing a reinsurance scheme to cover indemnity obligations of the states. However because of very high financial obligations none of the states accepted the scheme. Different experiments on crop insurance on a limited, ad-hoc and scattered scale was started from 1972-73. In 1972-73 the General Insurance Department of the Life Insurance Corporation of India introduced a crop insurance scheme on H-4 cotton. In 1972, General Insurance business was nationalized and by an Act of Parliament, the General Insurance Corporation of India was setup. The General Insurance Corporation took over the experimental scheme in respect of H-4 cotton, groundnut, etc., grown by small and marginal farmers. The schemes which operated between 1973 and 1976 resulted in heavy financial losses. In view of these economic difficulties, the crop insurance scheme was discontinued. Dandekar (1976) a leading agricultural economist, recommended a crop insurance scheme to be based on homogeneous area approach and the linking of insurance with crop loans. Based on his report, a pilot crop insurance scheme (PCIS) was introduced in 1979 for agriculture commodities including cereals, millets, oilseeds, cotton, potato and gram. The risk was shared between General Insurance Corporation of India and State Governments in the ratio of 2:1. With the maximum sum insured was 100 percent of the crop loan, which was later increased to 150

percent. The PCIS launched in 1979 continued till 1984-85 and was implemented in 13 states. During this period it covered 6.27 lakh farmers for total premium of Rs.196.95 lakhs against claims of Rs.157.05 lakhs.

### **1.2.1 Comprehensive Crop Insurance Scheme (CCIS)**

On the basis of experience gained from implementation of PCIS a Comprehensive Crop Insurance Scheme (CCIS) was introduced with effect from 1st April 1985 by the Government of India with the active participation of State Governments. The Scheme was linked to short term crop credit and implemented on homogeneous area basis. Though the scheme was available to all states it was not mandatory. In all 15 states and 2 union territories implemented the Scheme until Kharif 1999. It covered farmers availing crop loans from financial institutions for growing food crops and oilseeds on compulsory basis. The coverage was restricted to 100 per cent of crop loan subject to a maximum of Rs.10 thousand per farmer. The premium rates were 2 per cent for cereals and millets and 1 per cent for pulses and oil seeds. Small and marginal farmers were given a subsidy of 50 per cent of the premium payable shared equally by the central and state governments. The central and state governments shared the premium and claims in the ratio of 2:1. The scheme was a multi-agency effort, involving Government of India, State Governments, Banking Institutions and General Insurance Corporation of India.

### **1.2.2 Pilot Project on Farm Income Insurance Scheme**

Under the project comprehensive risk insurance was provided against loss in actual farm income against the guaranteed income in a notified area arising out of adverse fluctuations in yield due to one or more non-preventable perils and adverse fluctuations of market prices as measured against minimum support price (MSP) for the crops covered. The project covered paddy and wheat crops and all farmers (loanee on compulsory and others on voluntary basis) in selected states and districts which gave their consent for inclusion. The sum insured was guaranteed income per unit area arrived at using average yield of past 7 years, current MSP and indemnity level.

### **1.2.3 Sookha Suraksha Kavack (Drought Risk Insurance)**

Sookha Suraksha Kavach was specially designed for Rajasthan as the state was prone to severe drought conditions. The scheme covered 23 districts and provided insurance protection to popularly grown crops like guar, bajra, maize, jowar, soybean and groundnut.

## **1.3 Agriculture Insurance Corporation**

**1.3.1 Agriculture Insurance Company of India Limited (AIC)** has been formed at the behest of Government of India, consequent to the announcement by the then Hon'ble Union Finance Minister in his General Budget Speech FY 2002-03 that, "to sub-serve the needs of farmers better and to move towards a sustainable actuarial regime, it was proposed to set up a new Corporation for Agriculture Insurance".

AIC has taken over the implementation of National Agricultural Insurance Scheme (NAIS) which, until FY 2002-03 was implemented by General Insurance Corporation of India. In addition, AIC also transacts other insurance businesses directly or indirectly concerning agriculture and its allied activities. AIC has launched the Coconut Palm Insurance Scheme (CPIS), the major features of which are-

1. In collaboration with Coconut Development Board, a comprehensive coconut life insurance product.
2. Insurance based on Named perils leading to death/permanent damage to coconut palm
3. Maximum liability is based on age of coconut palm and discounted future value

Coconut is the leading plantation crop of India grown mostly in the coastal areas. Every part of coconut has use – coconut water, coconut oil, copra, raw kernel, toddy, shell, wood, and coconut leaves, etc. Coconut occupies dominant position with cultivated area of nearly 2 million hectares, producing over 12 billion nuts per annum. Coconut is vulnerable to weather factors, particularly cyclone winds, gales etc. besides pests and diseases.

### **1.3.2 Coconut Palm Insurance Scheme**

It is a mechanism for providing effective risk management aid to those growers who are likely to be impacted by non-preventable natural factors, pests and diseases, etc.

#### **1.3.2.1 Coverage**

The insurance cover includes damage/losses to coconut palm and/or nut yield arising out of non-preventable natural factors. During the year 2011-12, only Section 1, i.e. loss of coconut palm due to non-preventable factors is covered.

### **1.3.2.2 Insurance of Nut Yield**

The insurance compensates the insured against the likelihood of diminished nut output/yield resulting from non-preventable natural factors, such as Natural Fire, Lightning, Storm, Hailstorm, Cyclone, Typhoon, Tempest, Hurricane, Tornado, Flood, Inundation, Landslide and Pests/Diseases etc

### **1.3.2.3 Insurance of Coconut Palm**

The insurance compensates the insured in the event of total loss of the individual palm/tree in the insured plantation from the 4th year to the 60th year. In the first year, a waiting period of three months from the date of transplanting shall apply. The insurance coverage and claim assessment shall be on individual tree basis. The insurance is against perils like Storm, Hail storm, Cyclone, Typhoon, Tornado, Heavy rains, Flood, Inundation, severe Drought, Fire, Lightning, Earthquake, Landslide, Riot, Strike and Pests and Diseases of widespread incidence.

### **1.3.2.4 Sum Insured**

For section – 1 (nut yield), Sum insured shall vary from Block to Block and is determined by the Guaranteed Yield of the Block multiplied by the previous year's average nut price in the respective district. For section – 2, Sum insured is based on the average input cost of the plantation according to the age of the plantation.

### **1.3.2.5 Premium**

The premium is determined on the basis of variability in the historical Block level nut yield and age of the palm.

## **1.4 Coconut Palm Insurance Scheme (CPIS)<sup>1</sup>**

### **1.4.1 Introduction**

Coconut cultivation has been subjected to risks from climatic changes, natural disasters, pests, diseases etc. And at times, entire coconut cultivation of a region gets wiped out due to natural calamity or onset of pest attack. Coconut is a perennial crop and losses suffered by farmers due to damage of this crop, are material and needs to be addressed. At present, there is no insurance

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<sup>1</sup> Source: [http://coconutboard.nic.in/scheme.htm#Coconut Palm Insurance Scheme](http://coconutboard.nic.in/scheme.htm#Coconut%20Palm%20Insurance%20Scheme)

scheme under which coconut cultivation may be covered, since National Agricultural Insurance Scheme (NAIS) for insurance of cereals, millets, pulses, oilseeds and horticultural crops.

Coconut palms are perennial crops, but palm trees are characterized by periodic system of crop setting and outcomes and hence resembles seasonal annual crops and should, accordingly, be eligible for insurance cover. Since coconut is cultivated under rain-fed management and is susceptible to biotic and a-biotic stresses, it is necessary to minimize risk faced by coconut farmers, predominantly small and marginal, by covering coconut palms with an insurance scheme.

#### **1.4.2 Objectives**

- i) Assist coconut growers in insuring coconut palms, against natural and other perils.
- ii) Provide timely relief to farmers, who suffer income loss due to sudden death of palms.
- iii) Minimize risk and encourage replanting and rejuvenation to make coconut farming remunerative.

#### **1.4.3 Applicability**

The insurance scheme for insuring coconut cultivation is to be implemented on pilot basis initially and will be applicable to all healthy nut bearing coconut palms; grown as mono or intercropped; on bunds farms or homestead and to all varieties of coconut, including Tall, Dwarf and Hybrids. Since Dwarf and Hybrids begin to yield fruit from 4th year of planting, this variety of coconut palms in age range of 4-60 year will be covered under this scheme, but Tall variety coconut palms will be eligible for coverage for age range of 7-60 year. Unhealthy and senile palms will be excluded from coverage.

#### **1.4.4 Eligibility criteria**

As per the Scheme, individual farmer/grower offering at least 10 healthy but bearing palms for insurance in specified age groups, (4-60 years for dwarf, hybrid and 7-60 years for tall) in contiguous area/plot will be eligible for insurance.

#### **1.4.5 Scope of cover**

The scheme will cover all healthy palms within insurable age group in areas/districts selected for implementation of the scheme, on pilot basis. Partial insurance of plantation in contiguous

area is not allowed. Insurance coverage is from 4th/7th year to 60th year, and split into two age groups i.e. 4 -15 years and 16 -60 years, for fixing premium and sum insured.

Self declaration of age group by insured farmer/grower in insurance proposal will be acceptable. Agriculture Insurance Company of India Ltd. (AIC) may get the insured palms verified for authenticity, at any time before expiry of policy period or payment of claim. Insurance becomes void in event of wrong declaration of age or any material fact by insured, concerning insurance.

Farmers/growers desiring insurance may directly contact representatives/authorized agents of AIC or may contact nearest office of Agriculture/Horticulture Department Premium will be paid by farmer/grower, net off premium subsidy, through cash, cheque/bank draft, drawn in favour of Agriculture Insurance Company of India Limited.

#### **1.4.6 Contingency insured**

This insurance policy pays for total loss of palm on account of happening of perils insured leading to death of insured palm or it is becoming unproductive. In case, death of palms is not immediate, payment of sum insured will be payable on production of certificate from Coconut Development Board (CDB)/Agriculture/Horticulture Department justifying cause for declaring palm unproductive. A palm can be declared 'unproductive' only when further growth/rejuvenation of palm is not possible after the same damaged by peril(s) insured, provided palm is removed/felled by insured. In case farmer/grower wishes to retain unproductive palm as it is (without felling), salvage value of 50 percent of sum insured will be deducted from claim. In any case, loss of palm will have to be established to, occurrence of peril insured.

#### **1.4.7 Risks covered**

The scheme covers following perils leading to death/loss of palm becoming unproductive.

- i) Storm, hailstorm, cyclone typhoon, tornado, heavy rains.
- ii) Flood and inundation.
- iii) Pest and diseases of widespread nature causing, irreparable damages to palm.
- iv) Accidental fire, including forest fire and bush fire, lightening.
- v) Earth quake, landslide and tsunami.
- vi) Severe drought and consequential total loss.

#### **1.4.8 Exclusions**

No claims shall be payable under the scheme, if palm is lost due to operation of peril insured is within 'Franchise' clause. Insurer will not be liable for any payment, under this policy, for any expenses incurred by insuree in connection with or in respect of loss other than on account of perils insured. The insurance does not cover following events, in so far as they are applicable, keeping in view scope of insurance cover:

- (a) Loss by Theft, War, Invasion, Civil War, Rebellion, Revolution, Insurrection, Mutiny, Lock Out, Malicious Damage, Conspiracy, Military/Usurped Power, Civil Commotion, Confiscation, Requisition/Destruction/Damage by order of any Government de-jure/de-facto/by any public/municipal/local authority including damage due to power transmission.
- (b) Nuclear reaction, nuclear radiation or radioactive contamination.
- (c) Impact damage due to aircraft or other falling objects.
- (d) Willful negligence of insured and any one acting on his behalf.
- (e) Damage caused by human, bird or any animal action.
- (f) Improper maintenance of palms.
- (g) Palm becoming unhealthy & senile.
- (h) Natural mortality of the palm, up-rooting of palm traceable to chiseling of roots.
- (i) Loss of capital investment like land cost loss or damage to structures supporting insured palm, irrigation system, agricultural equipments or implements.

#### **1.4.9 Sum Insured and Premium**

Insured sum will vary from Rs 600 per palm (for 4th -15th year age group) to Rs 1150 per palm (for 16th to 60th year age group). Insured sum and premium payable, under Coconut Palm Insurance, under different age groups are shown in Table 1.1.

Table 1.1 Coconut Palm Insurance Scheme-General Features

| Coconut Palm age in years            | Sum insured per palm (Rs.) | Premium per plant / year (Rs.) | Premium per palm (with service tax @10.30%) |
|--------------------------------------|----------------------------|--------------------------------|---------------------------------------------|
| 4 <sup>th</sup> - 15 <sup>th</sup>   | 600                        | 4.25                           | 4.69                                        |
| 16 <sup>th</sup> to 60 <sup>th</sup> | 1150                       | 5.75                           | 6.35                                        |

Source: CDB

#### **1.4.10 Premium Subsidy**

Of the amount mentioned in Table 1.1, 50 percent will be paid by Coconut Development Board (CDB) and 25 percent by State Government concerned and balance 25 percent will be paid by farmer/grower. In case, the State Government does not agree to bear 25 percent share of premium, farmers/growers will be required to pay 50 percent of premium, if interested in insurance scheme. Premium subsidy amount (50 percent by CDB and 25 percent by participating States) will be released to AIC in advance based on estimates, which will be replenished/adjusted on quarter/year basis.

#### **1.4.11 Insurance Term**

During pilot stage of insurance policy, annual policies only will be issued. Efforts will be made to ensure that all eligible farmers/growers join the scheme by 31st March of year. However, those farmers/growers who do not join the scheme by 31st March may join the scheme subsequently, and in which case risk is covered from 1st day of succeeding month. During subsequent years, preference will be given to farmers who have already joined the scheme and new farmers can join the scheme subject to number as will be decided by CDB, taking into account available budget provision.

#### **1.4.12 Waiting Period**

Loss/death of palms, within 30 days from inception of insurance, sum insured is not payable under the scheme but this condition is not applicable in case of renewal of insurance, without time gap.

#### **1.4.13 Franchise**

The claim is assessed only if number of palms damaged, due to perils insured are in a contiguous area is more than the palms lost as shown for different slabs in Table 1.2.

Table 1.2 Criteria for CPIS claims

| Sr. No. | No. Of Insured Palms in a contiguous area | Franchise (Palms) |
|---------|-------------------------------------------|-------------------|
| 1       | 10 – 30                                   | 1                 |
| 2       | 31 - 100                                  | 2                 |
| 3       | > 100                                     | 3                 |

Source: CDB

#### **1.4.14 Excess**

Insured farmers/growers shall be deemed to be their own insurer for first 20 percent of the assessed loss and only 80 percent of assessed loss will be payable, under the policy.

#### **1.4.15 States and Areas Covered**

This pilot insurance scheme was implemented in selected districts of Andhra Pradesh, Goa, Karnataka, Kerala, Maharashtra, Orissa and Tamil Nadu. All bearing and healthy palms will be insured, in a contiguous area, by farmer/grower and every effort will be made by CDB, to get all bearing and healthy palms insured, in cluster villages of pilot district(s).

#### **1.4.16 Issue of Insurance Policy**

Certificate of Insurance/Cover note will be issued by AIC to all individual insured farmers/growers, within 30 days from receipt of proposal, within requisite premium. AIC shall also furnish a consolidated list of insured farmers/growers district-wise to Coconut Development Board (CDB), on quarterly basis.

#### **1.4.17 Claim assessment and settlement procedure**

Loss of insured palms will be intimated by insured to AIC within seven days from occurrence of peril, with all relevant details. Loss assessment certification is required to be furnished by

Coconut Development Board (CDB)/ Agriculture/Horticulture Department/State Agriculture University (SAU), as authorized by AIC for each district, justifying cause for loss of palm, within seven days from intimation of loss. AIC, at its discretion may send its representative to assess loss, jointly with agency designated to certify loss. AIC will release claim to insured farmer/grower within one month from date, all relevant certified details of claim are received in their office. Release of claim amount, however, is subject to receiving premium subsidy from both CDB and concerned State. Insurance ceases to operate once a full claim is paid.

AIC may consider payment of service charge to Agriculture / Horticulture Department or State Agriculture University (SAU), who are involved in certification of losses at rate mutually agreed between concerned agency and AIC.

### **1.5 An Overview of Literature**

Insurance changes the marginal costs and input use in two ways. First, insurance reduces risk and therefore reduces the wedge between expected marginal product and input price due to risk aversion. Secondly, insurance reduces the marginal productivity of all inputs and suggested that in evaluating alternative insurance schemes, simulation exercises could be used to assess the tradeoff between risk reduction and moral hazard effects. (Ramaswami, 1993)

Risks and uncertainty pose a serious impediment to agricultural development. One method of setting risks to farmers is through crop insurance (Hazell and Valdes, 1985). There are several types of crop insurance i.e. the all-risk crop insurance, area yield crop insurance and the weather crop insurance. Among them, the yield and weather crop insurance are the preferable and more reliable ones (Halcrow, 1978). Crop insurance initiated through farmers cooperatives should be welcomed since it promotes greater stability in agriculture and more rational decision making (Nieuwodt, 1984).

If the crop insurance programmes are to be useful in agricultural development, it must be carefully reworked to maximize their efficiency for both farmers and government .High administrative costs of crop insurance make government subsidies a requirement. Subsidies will, in general, induce greater risk taking behavior among farmers. If insurance was available, a premium subsidy would tend to induce greater risk taking (Kouadio, 1983). The effect of insurance decomposes into a “risk reduction” effect as well as a “moral hazard” effect. The direction and magnitude of these effects depend on the parameters of the insurance contract,

producer's risk preferences, and the underlying technology. (Ramaswami, 1993). Individual coverage contracts are informally superior to standard contracts because the farmer's coverage is proportional to his average historical yield (Vercammen *et al.*, 1994).

Agricultural Insurance is a means of protecting the agriculturist against financial losses due to uncertainties that may arise agricultural losses resulting from foreseen or all unforeseen perils beyond their control (*Raju and Chand, 2008*)

In India, the participation of farmers in voluntary public sector crop insurance schemes has been low. It was found that crop insurance was not effective in smoothing out fluctuations in income. The simulation results point to some general conditions that have to be satisfied if crop insurance is to generate measurable risk benefits. The institutional alternatives were superior to crop insurance as a means of reducing income variability for a large number of rural households (Walker *et al.*, 1986). Crop credit insurance also reduces the risk of becoming defaulter of institutional credit. The reimbursement of indemnities in the case of crop failure enables the farmer to repay his debts and thus, his credit line with the formal financial institutions is maintained intact (Hazell *et al.*, 1986; Pomareda, 1986; Mishra, 1996).

In terms of the methods of premium collection, the premium amount should be a variable cost based on the yield and the area of cultivation as well as a predetermined price. In this method, the farmer would make most of the premium payments in years when he obtains high yields and would pay little in years when the yields are low (Botts, 1962). Martin and Roland (1966) held that the premium rates should be adjusted only when there is a trend due to technology and cyclical movement in weather and in the distribution of crop yield over time. The major factors influencing the long term crop yields like resource (R), technology (T), weather (W) and residual (F) were used in calculating the average premium. Premium should be expressed in terms of percentage of the average yield as it would be useful in deciding whether the premium is within the paying capacity of the farmers (Borude and Joglekar, 1971).

Singh (1972) emphasized that crop insurance should be based on the principle that a portion of savings in the good years is used to compensate farmers by giving them indemnify for their low yields in years of natural calamities. Most of the farmers got information about the insurance schemes from insurance agents but only a few had taken the crop insurance policy (Niranjan Lal *et al.*, 2000).

Dandekar (1976) developed a feasible crop insurance scheme based on area approach. He also indicated that the area approach was more meaningful than the individual approach. A study by Jerry et al. suggested that the Group Risk Plan (GRP) indemnity payments are made based on percentage shortfalls in actual county yields relative to forecasted yield and historical country yield data are used to develop forecasted yields and premium rates Jerry *et al.*, (1997). The overpricing of the popular insurance companies for low deductible policies is reason for the large premium subsidies to induce farmers to move from low-deductible to high-deductible policies beginning in 2001.

In terms of agriculture insurance scheme the most developed form of agriculture insurance is crop insurance which accounted for 90 percent of the premium written in the sector in 2008 (Iturrioz, 2009). The problems in developing countries in the operation of insurance schemes seriously limit the probability of success and decreases the level of benefits realized. Many of the problems are institutional constraints resulting in an inability to perform the needed operational tasks. Lack of education of farmers, small and fragmented land holdings, vaguely defined tenured patterns and absence of land records greatly increased the cost and the administrative problems of operating crop insurance schemes in developing countries (Crawford, 1979).

The voluntary scheme with uniform highly subsidized premium rates throughout a country encourages adverse selection. An individual approach, coupled with inadequate provisions of co-insurance on the other hand increases the risk of fraud. To make the scheme a national programme, one has to move away from the individual approach to an area approach of insurance which would eliminate the risk of fraud. An area approach applied on some form of a compulsory basis also does way with the problem of adverse selection (Ahasan, 1983).

Insurance coverage is directly associated with productivity. Premium calculated in terms of percentage of average yield is useful to decide whether the premium is within the paying capacity of the farmer (Pandey *et al.*, 1981). The continued support of farmers is essential for a crop insurance scheme to be successful (Singh, 1967). If uniform premium rates were imposed in all regions, they would be like a regressive tax, wherein the farmers in low yield regions would be paying more through premium, than they would receive through indemnities (Nadkarni, 1971). There should be effective co-ordination between the insurance credit and marketing agencies. Individual approach, though more elaborate and scientific, is not likely to succeed in

practice and the area approach is considered as a better alternative. The primary responsibility of initiating the scheme was with the government insurance companies and the state governments (Choudary, 1977). The crop insurance scheme is based on the area approach and that a taluk/tahasil is taken to be the area. Indemnities payable to farmers in the area are assessed on the basis of the average for the area and the variations in the yield within the area are neglected. However, this method is considered unsatisfactory.

Through crop insurance, farmers could purchase the right for compensation by paying only a small amount and they are assured of protection against uncertainties. Crop insurance schemes for multiple risks face problems of moral hazards and adverse selection. The subsidy required under the homogeneous area approach was lesser than under the individual yield approach (Rustagi, 1988). Farmers have benefited by the crop insurance scheme. There is need to extend the scheme to non borrowers in addition to beneficiaries availing crop loans, so as to safeguard the interest of large farming community (Khonarkar, 1995).

Direct premiums returns for agricultural insurance have grown rapidly in recent years—from US\$ 8 billion in 2005 to an estimated US\$ 18.5 billion in 2008. Three main factors have contributed to this growth. First, increase in the value of agricultural production in recent years which has impacted directly on the agricultural insurance premium volume. Second, the increase in value of agricultural assets which has also increased the sensitivity of agricultural value chain participants to loss, consequently raises their demand for insurance. And third, the development of new markets for agricultural insurance and the increase of public sector support in existing markets, which have contributed to an increase in the demand for agricultural insurance (Iturrioz, 2009).

From a geographical perspective, the bulk of the agricultural premium return is in United States and Canada, with approximately 62 percent of the market. This is followed by Asia (18 percent) and Europe (16 percent). The balance comprises 2 percent in Latin America and 1 percent in Oceania and Africa respectively (Iturrioz, 2009). Crop insurance is the most developed sub-line of business of agricultural insurance that accounts for almost 90 percent of the total premium written worldwide.

The cause-and-effect relationships in agriculture are not always readily observable. Also there are many variables that affect agricultural production, not all of which are insurable. An insurer

must be able to establish the link between a loss that is insurable and the cause of the loss. Governments have an interest in agricultural insurance from the perspective of maintaining productivity for the economy and safeguarding the wellbeing of the rural community. The most common type of public sector support to agricultural insurance is through premium subsidies; 63 percent of the surveyed countries use this mechanism to support crop insurance and 35 percent to support livestock insurance.

There is a correlation between the level of public sector support and the penetration of agricultural insurance. Public sector support is the highest in the United States and Canada and both account for 70 percent of the written premium in the market. They are followed by Europe that writes 17 percent of the premium. In Africa and countries such as Australia and New Zealand where there is little or no public sector involvement, consequently the levels of written premiums are very low (Iturrioz, 2009).

## **1.6 Methodology**

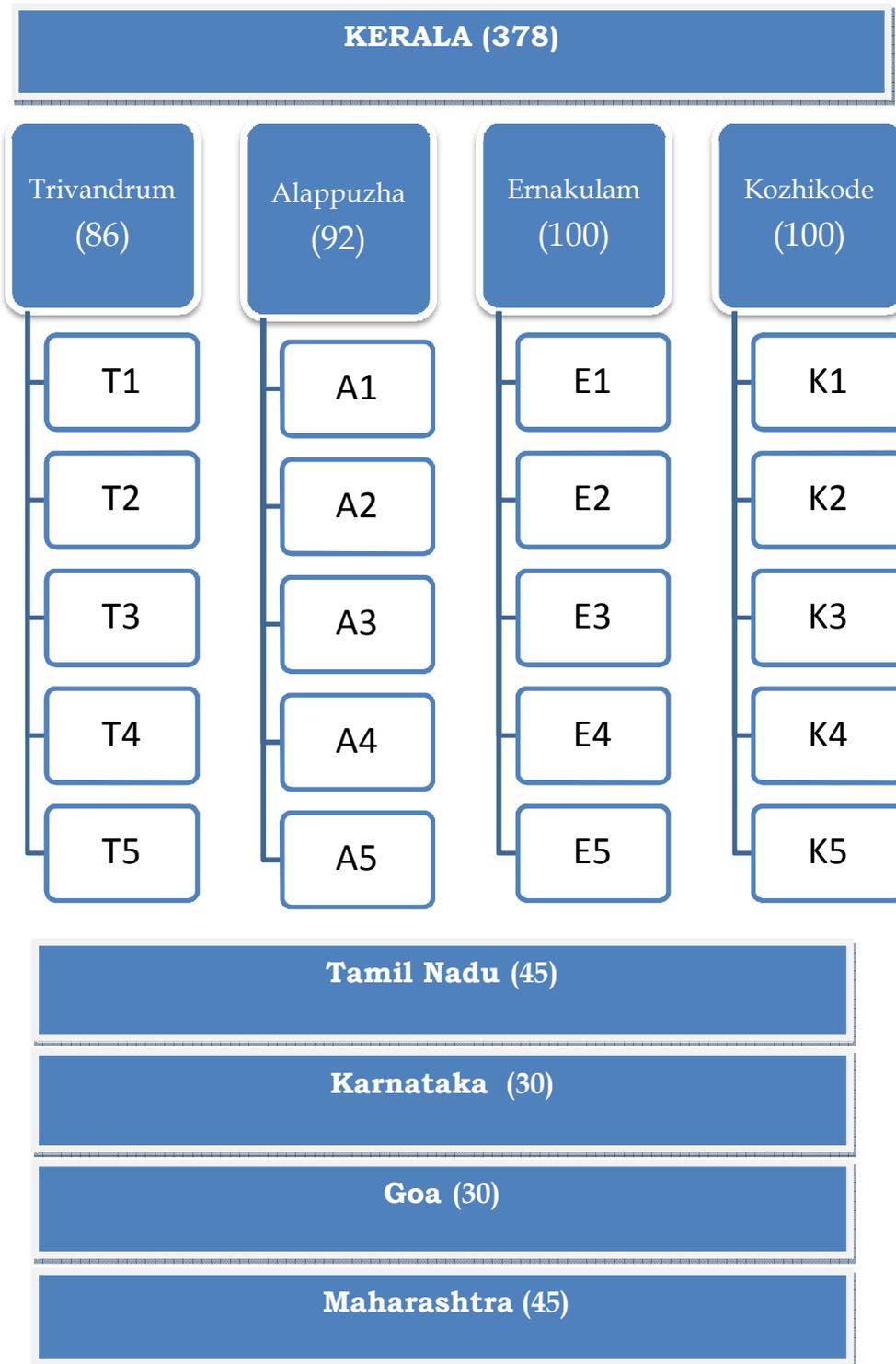
Total sample size of 528 was taken for understanding the perception about coconut palm insurance scheme implemented by the Coconut Development Board from the five states – Kerala, Tamil Nadu, Karnataka, Goa and Maharashtra.. Multi stage proportionate random sampling technique was employed for collecting samples from the aforementioned states. Table 1.3 shows the number of samples taken from various panchayaths in Kerala.

**Table 1.3 Panchayats with the largest number of palm growers in Kerala, 2010-2011**

| Kozhikode |                   |               | Ernakulam |                   |               | Alappuzha |                     |               | Thiruvananthapuram |                   |               |
|-----------|-------------------|---------------|-----------|-------------------|---------------|-----------|---------------------|---------------|--------------------|-------------------|---------------|
| No        | Name of Panchayat | No of growers | No        | Name of Panchayat | No of growers | No        | Name of Panchayat   | No of growers | No                 | Name of Panchayat | No of growers |
| K1        | Kavilum para      | 447           | E1        | Ramamangalam      | 182           | A1        | Arattupuzha         | 438           | T1                 | Vettoor           | 230           |
| K2        | Ayanche ry        | 318           | E2        | Parakadavu        | 150           | A2        | Cherthala (S)       | 298           | T2                 | Sreekaryam        | 201           |
| K3        | Thiruvambadi      | 291           | E3        | Karukutti         | 130           | A3        | Muhamma             | 285           | T3                 | Manampur          | 187           |
| K4        | Thamara ssery     | 286           | E4        | Edavanakkad       | 123           | A4        | Chennam Pallippuram | 283           | T4                 | Kadakkavur        | 187           |
| K5        | Peruvayal         | 285           | E5        | Nayarambalam      | 116           | A5        | Takazhi             | 245           | T5                 | Chemmaruthi       | 158           |
|           |                   |               |           |                   |               |           |                     |               |                    |                   |               |

In Kerala total 20 panchayats (Five panchayats with the largest number of palm growers in each district) was selected (Figure 1.3). They are K1, K2, K3, K4 and K5 in Kozhikode; E1, E2, E3, E4 and E5 in Ernakulam; A1, A2, A3, A4 and A5 in Alappuzha and T1, T2, T3, T4 and T5 in Thiruvananthapuram.

**Figure 1.1 Sample Framework**



## 1.7 Brief Profile of the Sampled States

### 1.7.1 Kerala

**Kerala** is an Indian state located on the Malabar Coast of south-west India. The state has an area of 38,863 km<sup>2</sup> (15,005 sq mi). Kerala has the highest Human Development Index in India, slightly higher than that of most developed countries, but with a much lower per capita income. The state has the highest literacy rate in India with 99 percent. It hopes to be the first e-literate state in India through the state run Akshaya project. The state recently became and is currently the only one to have banking facilities in every village. A survey conducted in 2005 by Transparency International ranked Kerala as the least corrupt state in the country. Kerala has witnessed significant migration of its people, especially to the Persian Gulf countries during the Kerala Gulf boom and is heavily dependent on remittances from its large Malayali expatriate community. Table 1.4 mentions the administrative and demographic particulars of the state.

Table 1.4 Administrative and Demographic Particulars, Kerala

| <i>Administrative Particulars</i>       | <i>Demographics</i>                             |
|-----------------------------------------|-------------------------------------------------|
| Number of Revenue Divisions -21         | <b>Population</b> 33,387,677                    |
| Number of Taluks -63                    | <b>Male – 1,6021,290</b>                        |
| Number of Corporations -4               | Females- 1,7366,387                             |
| Number of Block Panchayat -152          | <b>Total Rural Population – 17,455,506</b>      |
| Number of Grama Panchayat -1453         | <b>Total Urban Population - 15,932,171</b>      |
| Number of Assembly Constituencies -140  | Total SC population -370857                     |
| Number of Parliament constituencies- 20 | Total ST Population – 50973                     |
| Number of District Panchayaths -14      | Sex Ratio- 1084 per 1000 male                   |
|                                         | Child Sex Ratio- 959                            |
|                                         | Density of Population – 859.112/km <sup>2</sup> |
|                                         | Per Capita Income – Rs 72,366                   |
|                                         | Literacy Rate – 93.91 %                         |

Source: Census, (2011); Economic Review, (2011)

In fiscal year 2007–2008, nominal gross state domestic product (GSDP) was ₹162,414.79 crore (US\$ 35.73 billion). Recent GSDP growth (9.2 percent in 2004–2005 and 7.4 percent in 2003–2004) has been robust compared to historical averages (2.3 percent annually in the 1980s and between 5.1 percent and 5.99 percent in the 1990s). The state clocked 8.93 percent growth in enterprises from 1998 to 2005 compared with 4.80 percent nationally. Kerala's Human Development Index rating is the highest in India. This apparently paradoxical "Kerala phenomenon" or "Kerala model of development" of very high human development and not much high economic development results from the strong service sector. Kerala's economy depends on emigrants working in foreign countries (mainly in the Persian Gulf countries such as United Arab Emirates or Saudi Arabia) and remittances annually contribute more than a fifth of GSDP. As of 2008, the Gulf countries altogether have a Kerala diaspora of more than 2.5 million, who send home annually a sum of USD 6.81 billion, which is more than 15.13 percent of remittance to India in 2008, the highest among Indian States.

The service sector (including tourism, public administration, banking and finance, transportation, and communications—63.8 percent of GSDP in 2002–2003) and the agricultural and fishing industries (together 17.2 percent of GSDP) dominate the economy. Nearly half of Kerala's people are dependent on agriculture alone for income. Some 600 varieties of rice (Kerala's most important staple food and cereal crop) are harvested from 3105.21 km<sup>2</sup> (a decline from 5883.4 km<sup>2</sup> in 1990) of paddy fields; 688,859 tonnes are produced per annum. Other key crops include coconut (899,198 ha), tea, coffee (23 percent of Indian production, or 57,000 tonnes), rubber, cashews, and spices—including pepper, cardamom, vanilla, cinnamon, and nutmeg.

### 1.7.1.1 Area, Production and Productivity trends in coconut farming in Kerala

Table 1.5 Area, Production and Productivity of coconut ,Kerala

|         | <b>Particulars</b>        | <b>Kerala</b> |
|---------|---------------------------|---------------|
| 2007-08 | Area ('000 Hectares)      | 818.8         |
|         | Production (Million nuts) | 5641          |
|         | Productivity (Nuts/ha)    | 6889          |
| 2008-09 | Area ('000 Hectares)      | 787.77        |
|         | Production (Million nuts) | 5802          |
|         | Productivity (Nuts/ha)    | 7365          |

Source: CDB (2012)

In terms of total area farmed under coconut and in terms of production Kerala experienced a decline in 2008-09 when compared to the previous year as shown in the figures (Table 1.5), whereas there was a steady increase in productivity i.e. number of nuts per hectare in 2008-09 when compared to the figures in 2007-08.

### 1.7.2 Tamil Nadu

**Tamil Nadu** is the eleventh largest state in India by area and the seventh most populous state. It is the fourth largest contributor (as of 2010) to India's GDP and ranks tenth in Human Development Index as of 2006. Tamil Nadu is also the most urbanised state in India. The state has the highest number (10.56 percent) of business enterprises and stands second in total employment (9.97 percent) in India, compared to the population share of about 6 percent (Table 1.6).

Table 1.6 Administrative and Demographic Particulars, Tamil Nadu

| <i>Administrative Particulars</i>       | <i>Demographics</i>                              |
|-----------------------------------------|--------------------------------------------------|
| Number.of Revenue Divisions -76         | <b>Population</b> 72,138,958                     |
| Number of Taluks -220                   | <b>Male</b> – 36,158,871                         |
| Number of Corporations -10              | Females- 35,980,087                              |
| Number of Block Panchayat -385          | <b>Total Rural Population</b> – 37,189,229       |
| Number of Grama Panchayat -12524        | <b>Total Urban Population</b> - 34,949,729       |
| Number of Assembly Constituencies -234  | Total SC population -1,115884                    |
| Number of Parliament constituencies- 39 | Total ST Population – 6,51497                    |
| Number of District Panchayaths -32      | Sex Ratio- 995 per 1000 male                     |
|                                         | Child Sex Ratio- 959                             |
|                                         | Density of Population – 554.6676/km <sup>2</sup> |
|                                         | Per Capita Income – Rs 62,499                    |
|                                         | Literacy Rate –80.31%                            |

Source: Census (2011); Economic Review (2011)

Tamil Nadu's gross state domestic product for 2011 is estimated at US\$ 97.970 Billion in current prices. The state experienced a GDP growth rate of 12.1 percent for 2007-08. It was the third largest economy (2007–2008) among all states in India, and also the most industrialised state in India. It ranks third in foreign direct investment (FDI) approvals (cumulative 1991–2002) of ₹ 225,826 million (\$ 5,000 million), next only to Maharashtra and Delhi constituting 9.12 percent of the total FDI in the country. The per capita income in 2007–2008 for the state was ₹43,000 ranking second among the South Indian states and steadily been above the national average. The state is the largest producer of bananas, flowers, tapioca, the second largest producer of mango, natural rubber, coconut, groundnut and the third largest producer of coffee, sapota, Tea<sup>[123]</sup> and Sugarcane. Tamil Nadu's sugarcane yield per hectare is the highest in India. The state has 17,000 hectares of land under oil palm cultivation, the second highest in India.

### 1.7.2.1 Area, Production and Productivity trends in coconut farming in Tamil Nadu

Tamil Nadu experienced steady increase in area cultivated under coconut during the year 2008-09. Production as well as productivity also increased significantly during the period 2008-09 when compared to the previous year (Table 1.7).

Table 1.7 Area, Production and Productivity of coconut ,Tamil Nadu

| Year    | Particulars               | Tamil Nadu |
|---------|---------------------------|------------|
| 2007-08 | Area ('000)Hectares)      | 383.37     |
|         | Production (Million nuts) | 4968.2     |
|         | Productivity (Nuts/ha)    | 12959      |
| 2008-09 | Area ('000 Hectares)      | 389.6      |
|         | Production (Million nuts) | 5365       |
|         | Productivity (Nuts/ha)    | 13771      |

Source: CDB, 2012

### 1.7.3 Karnataka

**Karnataka** a state in South West India covers an area of 191,976 square kilometres (74,122 sq mi), or 5.83 percent of the total geographical area of India. It is the eighth largest Indian state by area (Table 1.8). With over 61 million inhabitants (2011), Karnataka is the ninth largest state by population, comprising 30 districts. Kannada is the most widely spoken and official language of the state.

Table 1.8 Administrative and Demographic Particulars, Karnataka

| <i>Administrative Particulars</i>       | <i>Demographics</i>                              |
|-----------------------------------------|--------------------------------------------------|
| Number of Revenue Divisions -4          | <b>Population</b> 6,113,6894                     |
| Number of Taluks -49                    | <b>Male</b> – 31,057,742                         |
| Number of Corporations -7               | Females- 30,072,962                              |
| Number of Block Panchayat -385          | <b>Total Rural Population</b> – 37,189,229       |
| Number of Grama Panchayat -5653         | <b>Total Urban Population</b> - 34,949,729       |
| Number of Assembly Constituencies -224  | Total SC population -85,63427                    |
| Number of Parliament constituencies- 28 | Total ST Population – 34,63848                   |
| Number of District Panchayaths -30      | Sex Ratio- 968 per 1000 male                     |
|                                         | Child Sex Ratio- 943                             |
|                                         | Density of Population – 554.6676/km <sup>2</sup> |
|                                         | Per Capita Income – Rs 62,499                    |
|                                         | Literacy Rate –80.31%                            |

Source: Census (2011); Economic Review (2011)

Karnataka had an estimated GSDP (Gross State Domestic Product) of about US\$ 58.23 billion in 2008-09 fiscal years. Karnataka recorded the highest growth rates in terms of GDP and per capita GDP in the last decade compared to other states. Nearly 56 percent of the workforce in Karnataka is engaged in agriculture and related activities. A total of 12.31 million hectares of land, or 64.6 percent of the state's total area, is cultivated. Much of the agricultural output is dependent on the southwest monsoon as only 26.5 percent of the sown area is irrigated. Karnataka is also a manufacturing hub for some of the largest public sector industries in India and is considered as the silicon valley of India because of the presents of major IT companies.

### 1.7.3.1 Area, Production and Productivity trends in coconut farming in Karnataka

Production of coconut farming Karnataka saw a healthy increase in of 2176 million nuts in 2008-09 from 1635 million nuts in 2007-08. Similar trend is visible in the case of total area under coconut farms in the state (Table 1.9).

Table 1.9 Area, Production and Productivity of coconut, Karnataka

| Year    | Particulars               | Karnataka |
|---------|---------------------------|-----------|
| 2007-08 | Area ('000 Hectares)      | 405       |
|         | Production (Million nuts) | 1635      |
|         | Productivity (Nuts/ha)    | 4037      |
| 2008-09 | Area ('000 Hectares)      | 419       |
|         | Production (Million nuts) | 2176      |
|         | Productivity (Nuts/ha)    | 5193      |

Source: CDB (2012)

### 1.7.4 Goa

**Goa** is India's smallest state by area and the fourth smallest by population. Goa is India's richest state with a GDP per capita two and a half times that of the country as a whole. It was ranked the best placed state by the Eleventh Finance Commission for its infrastructure and ranked on top for the best quality of life in India by the National Commission on Population based on the 12 Indicators.

Goa's gross state domestic product for 2007 is estimated at \$ 3 billion in current prices. Goa is one of India's richest states with the highest GDP per capita- two and a half times that of the country as a whole-and one of its fastest growth rates: 8.23 percent (yearly average 1990–2000).Tourism is Goa's primary industry: it handles 12 percent of all foreign tourist arrivals in India. Goa has two main tourist seasons: winter and summer. Agriculture, while of shrinking importance to the economy over the past four decades, offers part-time employment to a sizeable portion of the populace. Rice is the main agricultural crop, followed by areca, cashew and coconut. The fishing industry provides employment for about forty thousand people, though recent official figures indicate a decline of the importance of this sector and also a fall in catch, perhaps coupled with the fact that traditional fishing has given way to large-scale mechanised trawling (Table 1.10).

Table 1.10 Administrative and Demographic Particulars, Goa

| <i>Administrative Particulars</i>      | <i>Demographics</i>                            |
|----------------------------------------|------------------------------------------------|
| Number.of Revenue Divisions -2         | <b>Population</b> 14,57680                     |
| Number of Taluks -11                   | <b>Male</b> – 740,711                          |
| Number of Corporations -1              | Females- 717,012                               |
| Number of Block Panchayat -13          | <b>Total Rural Population</b> – 551,414        |
| Number of Grama Panchayat -189         | <b>Total Urban Population</b> - 906,309        |
| Number of Assembly Constituencies -40  | Total SC population -23,654                    |
| Number of Parliament constituencies- 2 | Total ST Population – 1200                     |
| Number of District Panchayaths -2      | Sex Ratio- 997 per 1000 male                   |
|                                        | Child Sex Ratio- 924                           |
|                                        | Density of Population – 393.77/km <sup>2</sup> |
|                                        | Per Capita Income – Rs 1,32,719                |
|                                        | Literacy Rate –87.3%                           |

Source: Census (2011); Economic Review (2011)

#### **1.7.4.1 Area, Production and Productivity trends in coconut farming in Goa**

Total area, production and productivity under coconut cultivation increased in the state in the year 2008-09 when compared to the figures of 2007-08(Table 1.11), even though the total area under coconut cultivation is comparatively less when compared to other major coconut cultivating states in country.

Table 1.11 Area, Production and Productivity of coconut, Goa

| Year    | Particulars               | Goa   |
|---------|---------------------------|-------|
| 2007-08 | Area ('000 Hectares)      | 5.5   |
|         | Production (Million nuts) | 27.6  |
|         | Productivity (Nuts/ha)    | 004   |
| 2008-09 | Area ('000 Hectares)      | 5.61  |
|         | Production (Million nuts) | 28.18 |
|         | Productivity (Nuts/ha)    | 005   |

Source: CDB, 2012

### 1.7.5 Maharashtra

**Maharashtra** is the second most populous after Uttar Pradesh and third largest state by area in India. Maharashtra contributes to 25 percent of the country's industrial output and 23.2 percent of its GDP in 2010-11. The state covers an area of 307,731 km<sup>2</sup> (118,816 sq mi) or 9.84 percent of the total geographical area of India (Table 1.12). Maharashtra is the world's second most populous first-level administrative country sub-division. Were it a nation in its own right, Maharashtra's gross state domestic product for 2011 is estimated at ₹901,330 crore (US\$198.29 billion) in current prices. As of 2010 Maharashtra had a Per Capita Income of \$ 1,660, far ahead of national average of \$ 1,219. Maharashtra's GDP Per Capita crossed the US\$ 2,000 threshold for the first time in 2011 making it one of the richest states in India. Mumbai, the capital of Maharashtra houses the headquarters of almost all major banks, financial institutions, insurance companies and mutual funds. Although Maharashtra is a highly industrialized state of India, agriculture continues to be the main occupation of the state. Principal crops include rice, jowar, bajra, wheat, pulses, turmeric, onions, cotton, sugarcane and several oil seeds including groundnut, sunflower and soyabean. The state has huge areas, under fruit cultivation of which mangoes, bananas, grapes, and oranges are the main ones. Irrigation facilities are being extended so that agriculture could be made less dependent upon rain water.

Table 1.12 Administrative and Demographic Particulars, Maharashtra

| <i>Administrative Particulars</i>       | <i>Demographics</i>                              |
|-----------------------------------------|--------------------------------------------------|
| Number of Revenue Divisions -2          | <b>Population</b> 96,752,247                     |
| Number of Taluks -11                    | <b>Male</b> – 58,361,397                         |
| Number of Corporations -1               | Females- 54,011,575                              |
| Number of Block Panchayat -13           | <b>Total Rural Population</b> – 61,545,441       |
| Number of Grama Panchayat -189          | <b>Total Urban Population</b> - 50,827,531       |
| Number of Assembly Constituencies -288  | Total SC population- 98,82864                    |
| Number of Parliament constituencies- 48 | Total ST Population – 8,577,276                  |
| Number of District Panchayaths -35      | Sex Ratio- 946 per 1000 male                     |
|                                         | Child Sex Ratio- 883                             |
|                                         | Density of Population – 365.1876/km <sup>2</sup> |
|                                         | Per Capita Income – Rs 1,32,719                  |
|                                         | Literacy Rate –82.9%                             |

Source: Census (2011); Economic Review (2011)

### 1.7.5.1 Area, Production and Productivity trends in coconut farming in Maharashtra

The figures in terms of area, production and productivity of coconut farming remained unchanged in Maharashtra during the period 2008-09 compared to 2007-08 figures (Table 1.13).

Table 1.13 Area, Production and Productivity of coconut, Maharashtra

| <b>Year</b> | <b>Particulars</b>        | <b>Maharashtra</b> |
|-------------|---------------------------|--------------------|
| 2007-08     | Area ('000 Hectares)      | 21                 |
|             | Production (Million nuts) | 175.1              |
|             | Productivity (Nuts/ha)    | 8338               |
| 2008-09     | Area ('000 Hectares)      | 21                 |
|             | Production (Million nuts) | 175.1              |
|             | Productivity (Nuts/ha)    | 8338               |

Source: CDB (2012)

## **1.8 Coconut Palm Insurance –An Overview**

Palms with a minimum average yield of about 30 coconuts per annum are covered under the scheme. Growers with at least 10 such palms can avail the scheme. The scheme is extended to the palms up to 60 years of age. Grower should insure all such palms in his farm. Complete and irreparable loss incurred to palms due to fire, lightning, flood, landslide, earthquake, uncontrolled attack of pests, drought, tsunami, rains, cyclones etc, is covered under this scheme. Compensation is fixed at Rs 600 for the palms up to the age of 15 years and Rs1150 for the palms at the age of 16-60 years. .

Out of the total premium, 50 percent and 25 percent are given as subsidy to the joining growers by the CDB and DoA respectively. Therefore the growers need to remit only Rs. 1.17 (including service tax) for the palms up to the age of 15 years and Rs 1.59 (including service tax) for those at the age of 16-60 years. However, losses like deliberate annihilation, felling consequent to the orders of courts or other such authorities, losses incurred within the first 30 days of insuring etc will not be covered under the scheme. In case of loss, grower should immediately submit the duly filled up claim form to the concerned office. Compensation would be dispersed within three weeks after the attested claim form is received by AIC.

### **1.8.1 State wise performance of Coconut palm Insurance Scheme in the Five Sampled States**

#### **1.8.1.1 Kerala- Performance of CPIS**

In Kerala, the scheme is implemented in the districts of Thiruvananthapuram, Alappuzha, Ernakulam and Kozhikodu jointly by the CDB, Department of Agriculture and AIC. A total of 1864 growers are insured under CPIS in the state of Kerala (Table 1.14) in the financial year 2010-11. A total of 64565 palms are insured under the scheme out of this 10303 palms comes under the age group of 04-15 years whereas palms 54262 fall under the age group of 16-60 years in Kerala. Total premium received under the scheme is Rs 376854 with farmers paying a premium of Rs 94213 and CDB and state government providing a subsidy of Rs 188426 and Rs 94213 respectively for the CPIS scheme in the financial year 2010-11.

Table 1.14 CPIS Performance in Kerala, 2010-11

| State                                            | <b>Kerala</b> |
|--------------------------------------------------|---------------|
| No of Growers                                    | 1864          |
| No of Palms (04-15 yrs age)                      | 10303         |
| 16-60 yrs age                                    | 54262         |
| Total Palms                                      | 64565         |
| Area insured(Ha)                                 | 1403.92       |
| Sum Insured                                      | 68583100      |
| Farmer's Premium received (25% of total Premium) | 94213.38      |
| CDB subsidy Premium (25% of total Premium)       | 188426.8      |
| Govt Subsidy Premium (25% of total Premium)      | 94213.38      |
| Total Premium                                    | 376854        |

Source: CDB (2012)

### 1.8.1.2 Tamil Nadu- Performance of CPIS

Under the CPIS scheme in Tamil Nadu a total of 1620 growers are insured in the 2010-11 financial year (Table 1.15). A total of 360585 palms are insured under the scheme out of this 45616 palms comes under the age group of 04-15 years whereas 315040 palms fall under the age group of 16-60 years. Total premium received under the scheme is Rs 2211879.82. Farmers paid a premium of Rs 556015 with CDB providing a subsidy of Rs 1105939 and government providing a subsidy of Rs 552969 for the CPIS scheme in 2010-11 financial years.

Table 1.15 CPIS in Tamil Nadu, 2010-11

| State                                                 | <b>Tamil Nadu</b> |
|-------------------------------------------------------|-------------------|
| No of Growers                                         | 1620              |
| No of Palms (04-15 yrs age)                           | 45616             |
| 16-60 yrs age                                         | 315040            |
| Total Palms                                           | 360585            |
| Area insured(Ha)                                      | 3212.77           |
| Sum Insured                                           | 389662150         |
| Farmer's Premium received (Rs) (25% of total Premium) | 556015            |
| CDB subsidy Premium (Rs) (25% of total Premium)       | 1105939.91        |
| Govt subsidy Premium (Rs) (25% of total Premium)      | 552969.95         |
| Total Premium (Rs)                                    | 2211879.82        |

Source: CDB (2012)

### 1.8.1.3 Karnataka- Performance of CPIS

Total of 544 growers are insured under CPIS in the state of Maharashtra (Table 1.16) in the 2010-11 financial year. A total of 8421 palms are insured under the scheme, out of this 8421 palms comes under the age group of 04-15 years whereas 63407 palms fall under the age group of 16-60 years. Total premium received under the scheme is Rs 44225.08. Farmers paid a premium of Rs 106464 with CDB providing a subsidy of Rs 221112 for the CPIS scheme in the financial year 2010-11.

Table 1.16 CPIS in Karnataka, 2010-11

| State                                            | Karnataka |
|--------------------------------------------------|-----------|
| No of Growers                                    | 544       |
| No of Palms (04-15 yrs age)                      | 8421      |
| 16-60 yrs age                                    | 63407     |
| Total Palms                                      | 71828     |
| Area insured(Ha)                                 |           |
| Sum Insured                                      | 77970650  |
| Farmer's Premium received (25% of total Premium) | 106464.00 |
| CDB subsidy Premium (25% of total Premium)       | 221112.54 |
| Govt Subsidy Premium (25% of total Premium)      |           |
| Total Premium                                    | 442225.08 |

Source: CDB (2012)

### 1.8.1.4 Goa- Performance of CPIS

Table 1.17 CPIS in Goa, 2010-11

| State                                            | Goa           |
|--------------------------------------------------|---------------|
| No of Growers                                    | 240           |
| No of Palms (04-15 yrs age)                      | 4262          |
| 16-60 yrs age                                    | 55381         |
| Total Palms                                      | 59,643        |
| Area insured(Ha)                                 | 625.26        |
| Sum Insured                                      | 69,250,300.00 |
| Farmer's Premium received (25% of total Premium) | 91,422.14     |
| CDB subsidy Premium (25% of total Premium)       | 182,844.29    |
| Govt subsidy Premium (25% of total Premium)      | 91,422.14     |
| Total Premium                                    | 365,689.16    |

Source: CDB (2012)

Table 1.17 shows that 240 growers are insured under CPIS in Goa in the financial year 2010-11. A total of 59,643 palms are insured under the scheme in which 4262 palms fall under the age group of 04-15 years and 55381 palms comes under the age group of 16-60 years. Rs 91,422.14

are the amount paid by farmers as premium in the CPIS scheme in 2010-11 financial years. Total premium received under the scheme is Rs 365,689.18 with CDB providing a subsidy of Rs 182,844.29 and state government providing a subsidy of 91,422.14.

### 1.8.1.5 Maharashtra- Performance of CPIS

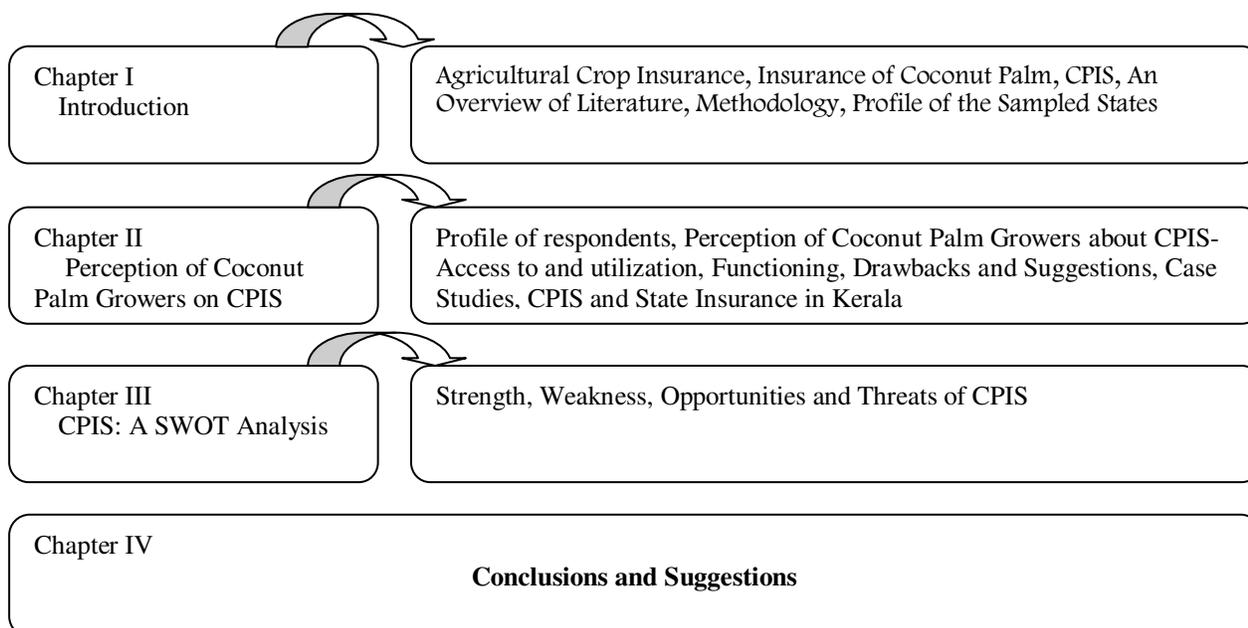
Table 1.18 CPIS in Maharashtra, 2010-11

| State                                            | Maharashtra    |
|--------------------------------------------------|----------------|
| No of Growers                                    | 1673           |
| No of Palms (04-15 yrs age)                      | 25702          |
| 16-60 yrs age                                    | 99767          |
| Total Palms                                      | 125469         |
| Area insured(Ha)                                 | 931.14         |
| Sum Insured                                      | 130,153,250.00 |
| Farmer's Premium received (25% of total Premium) | 188,307.94     |
| CDB subsidy Premium (25% of total Premium)       | 376,615.88     |
| Govt subsidy Premium (25% of total Premium)      | 188,307.94     |
| Total Premium                                    | 753,232.76     |

Source: CDB (2012)

Table 1.18 shows that 1673 growers are insured under CPIS in the state of Maharashtra in the financial year 2010-11. A total of 25702 palms are insured under the scheme. Total premium received under the scheme is Rs 753,232.76 with Rs188307, the amount that is paid by farmers as premium in the CPIS scheme in 2010-11 financial year and CDB providing a subsidy of Rs 376,615.88 and state government providing a subsidy of Rs 188,307.94.

## 1.9 Chapterisation Scheme



## Chapter II

### Perception of Coconut Palm Growers on CPIS

#### 2.1. Introduction

This section tries to situate the perception of the coconut growers on CPIS. By analyzing their perception, it is attempted to understand whether the target population of this scheme are satisfied with its overall structure and functioning. Their perception is all the more important as it is essential in designing and developing further strategies and plans for them as well as for fine tuning the existing programmes. Primary data is used to evaluate the acceptance and sustainability of CPIS. Perception of 528 coconut growers collected through primary survey) across three regions of Kerala, Goa-Maharashtra and Karnataka-Tamil Nadu are analysed. Out of the total 528 respondents, 378 represent Kerala, 75 from Maharashtra-Goa region and 75 from Karnataka-Tamil Nadu region. Demographic profile of the respondents has also been looked into with a view to linking their perception level for making use of the newly introduced scheme of CPIS. Four Case Studies are also presented in this section to capture the view points of the growers based on their experience.

#### 2.2. Profile of respondents

The section discusses the age, gender and educational aspects of respondents together with the description of the area of cultivation, palms insured, claims made, etc.

##### 2.2.1. Demography of respondents

Age of the respondents in the three regions is depicted in Table 2.1 (a). It can be seen that majority (50.7 percent) in Goa-Maharashtra region are above 60 years, followed by 40-60 (36 percent) and below 40 years (13.3 percent). In Karnataka-Tamil Nadu region, the majority are in the age group of 40-60 (65.3 percent), followed by above 60 years (20 percent) and below 40 (14.7 percent). In Kerala region, 40-60 age category constitutes the majority (49.7 percent) followed by above 60 (27.5 percent) and below 40 (22.8 percent). The majority of the sample respondents in Karnataka-Tamil Nadu as well as Kerala region are in between 40 and 60 years of age whereas in Goa-Maharashtra region the majority are over the age of 60.

Table 2.1 Demographic profile

| Region               | (a) Age Category       |         |          |           | (b) Gender |               |            |     |       |
|----------------------|------------------------|---------|----------|-----------|------------|---------------|------------|-----|-------|
|                      | Below 40               | 40-60   | Above 60 | Total     | Male       | Female        | Total      |     |       |
| Goa-Maharashtra      | 13.3                   | 36      | 50.7     | 100       | 85.3       | 14.7          | 100        |     |       |
| Karnataka-Tamil Nadu | 14.7                   | 65.3    | 20       | 100       | 81.3       | 18.7          | 100        |     |       |
| Kerala               | 22.8                   | 49.7    | 27.5     | 100       | 64.6       | 35.4          | 100        |     |       |
| Region               | (c) Educational Status |         |          |           |            |               |            |     |       |
|                      | illiterate             | Primary | UP       | secondary | SSLC pass  | Pre-degree/+2 | Graduation | PG  | Total |
| Goa-Maharashtra      | 5.3                    | 5.3     | 4        | 2.7       | 33.3       | 22.7          | 25.4       | 1.3 | 100   |
| Karnataka-Tamil Nadu | 7                      | 7       | 8        | 14        | 20         | 16            | 20         | 8   | 100   |
| Kerala               | 0.5                    | 2.6     | 8.7      | 11.2      | 47.4       | 13.2          | 11.9       | 4.5 | 100   |

Source: Survey data (2011-12)

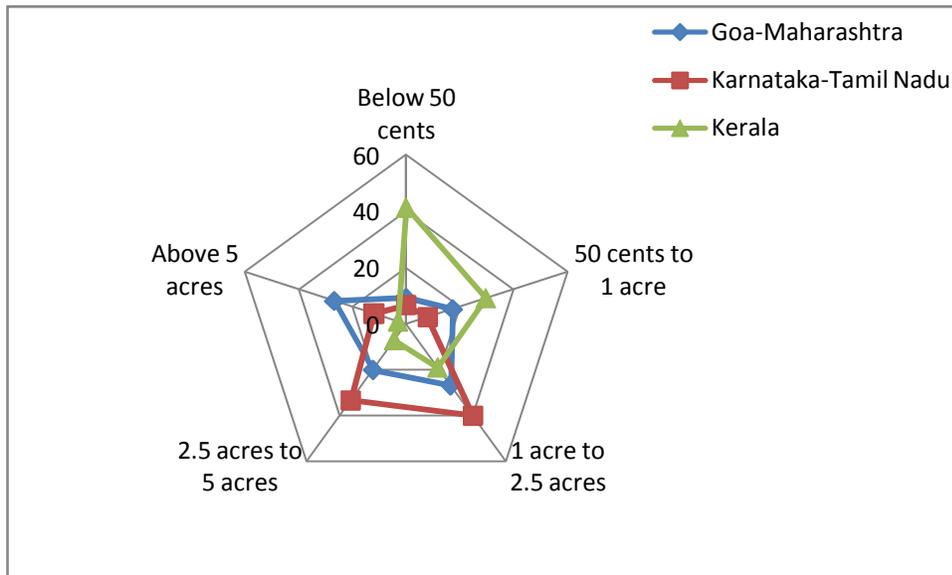
It can be inferred from Table 2.1 (b) that most of the respondents in Goa-Maharashtra region are males (85.30 percent). In Karnataka-Tamil Nadu region, the gender-break up (81.3 percent males and 18.7 percent females) shows almost similar pattern with that of Goa-Maharashtra region. However, composition of females is higher in Kerala region (35.4 percent) compared to other two regions (18.7 in Karnataka-Tamil Nadu and 14.7 in Goa-Maharashtra regions). But in Kerala males constitute 64.6 percent of the respondents in Kerala.

Regarding the educational status of the respondents of Goa-Maharashtra, it can be seen [Table 1(c)] that more than 80 percent of the respondents have education of SSLC or more while only 5.3 percent are illiterate. Pre-degree and Graduation level comes about 22.7 percent and 25.4 percent respectively and only 1.3 percent of the total sample is post graduates. In Karnataka-Tamil Nadu region, 7 percent of the total samples are illiterates whereas 64 percent have an education level of SSLC and above. While 20 percent are graduates, 8 percent are post-graduates. Percentages of illiterates are much lower in Kerala (0.5 percent), whereas post graduates are 4.5 percent. It can be inferred from the overall data that the percentage of respondents having qualifications of pre-degree, graduation are lower in Kerala compared to other regions.

### 2.2.2. Area of cultivation

Figure 2.1 shows that in Goa-Maharashtra region, the majority of respondents (26.7 percent each) have a total area of 1 to 2.5 acres and above 5 acres. While 20 percent have a total area between 2.5 and 5 acres, 17.3 percent have between 50 cents and 1 acre. Only 9.3 percent have a total area below 50 cents. Karnataka-Tamil Nadu region also has a similar pattern as the highest percent of respondents have 1 to 2.5 acres of land. However, in Kerala, only 19 percent fall in this category and the majority (41.3 percent) are having a land holding of 50 cents and below. It is evident from Figure 2.1 that most of the growers in Kerala region have got their cultivations in small areas and hence can be termed as small farmers compared to other regions. This may also be due to the fact that the growers in Goa-Maharashtra region cultivate other cash crops like mango and cashew too along with coconut palms. Figure 1 shows that there is disparity in the land holding pattern across regions.

Figure 2.1 Area of cultivation



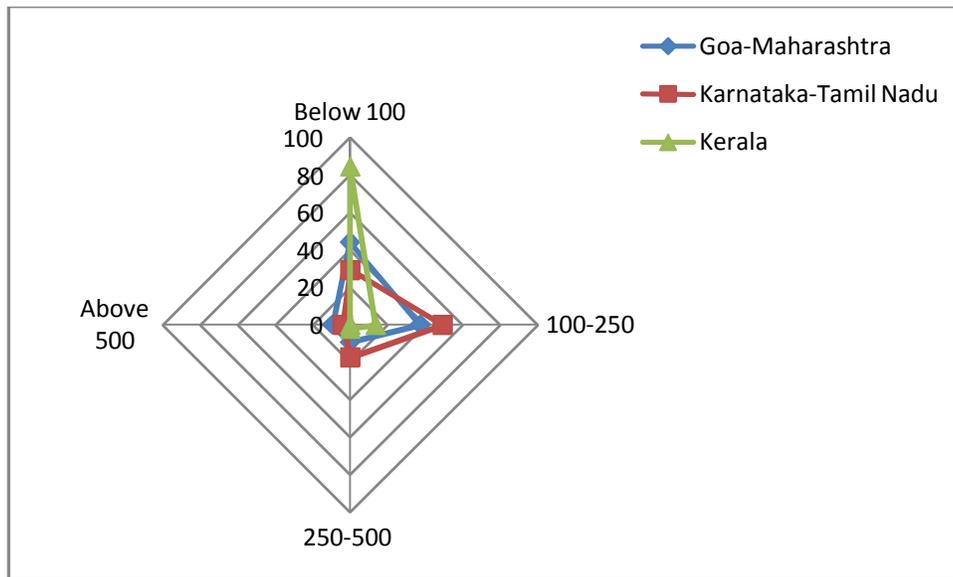
Source: Worked out from Appendix 2.1

### 2.2.3. Total bearing palms per grower

Appendix 2.2 throws light into the fact that in Goa-Maharashtra region, 81.4 percent are having a total of 250 palms or less. Percentages of respondents having 250-500 palms and 'above 500' palms are 9.3 percent each. Most of the respondents in Karnataka-Tamil Nadu region (49.3

percent) possess 100-250 palms. While only 4 percent have 500 palms or more in their farms, 29.3 percent have below 100 palms. Kerala region again shows contrasting results compared to other two regions as a whopping 84.4 percent have less than 100 palms and none of the growers has more than 500 palms. This reiterates that the majority of farmers in Kerala do small scale farming compared to other two regions (also see Figure 2.2).

Figure 2.2 Palms per grower

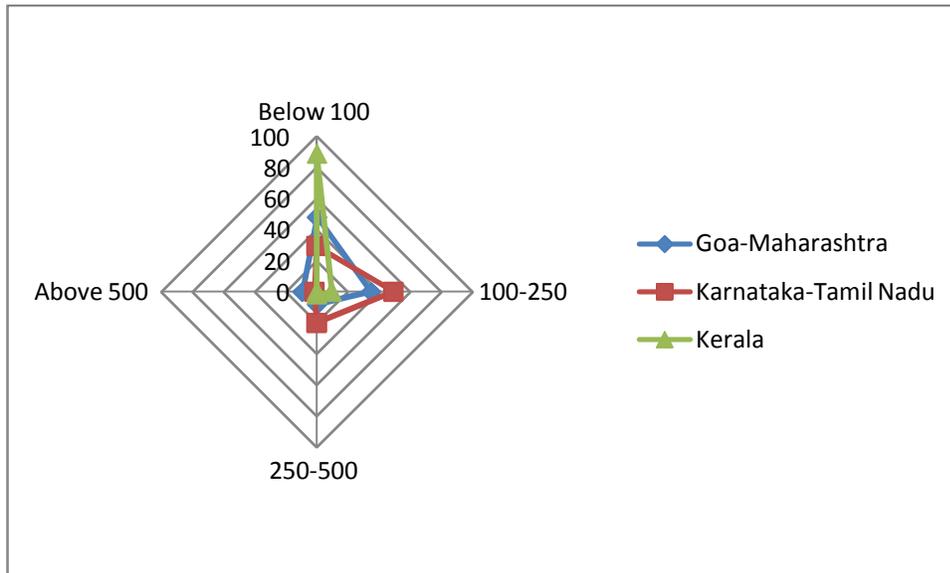


Source: Worked out from Appendix 2.2

#### 2.2.4. Total palms insured

As evident from Appendix 2.3 and Figure 2.3, 48 percent of respondents in Goa-Maharashtra region have insured 'below 100 palms', whereas 34.7 percent have insured between 100 and 250 palms. Percentage of respondents insuring more than 250 palms is 17.3 percent. 49.3 percent of the sample in Karnataka-Tamil Nadu region has insured between 100-250 palms, 29.3 percent have insured below 100 palms. Respondents insuring more than 250 palms amount to 21.4 percent. It is obvious that as the majority of growers in Kerala possess less than 100 palms, resulting in an insurance coverage of less than 100 palms (88.6 percent). None has taken insurance for more than 500 palms in Kerala region.

Figure 2.3 Palms insured

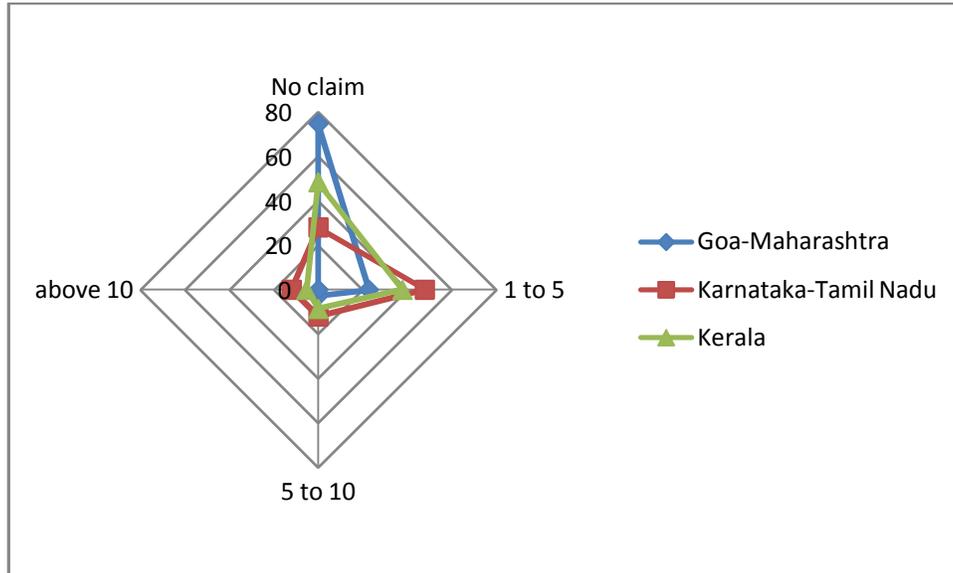


Source: Worked out from Appendix 2.3

### 2.2.5. Total palms claimed

It can be seen from Appendix 2.4 that 28 percent in Karnataka-Tamil Nadu have made no claims, whereas 48 percent have made claims for up to five palms. Percentages of respondents claiming between five and ten and above ten palms are 12 percent respectively. The percentage of respondents who did not make any claim is the highest in Goa-Maharashtra region (74.7 percent) which can be inferred from Figure 2.4 as well. Percentage of respondents claiming more than 10 palms is the highest in Karnataka-Tamil Nadu region. In Kerala region, 48.4 percent have not made any claims; whereas 37.8 percent have claimed around 1 to 5 palms (see Figure 2.4).

Figure 2.4 Palms claimed



Source: Worked out from Appendix 2.4

### 2.3. Access to and utilization of CPIS

Proper access to the scheme is all the more important to the growers to reap maximum benefits. Access to and utilization of the scheme in the form of source of information about CPIS, subscription to CPIS, coverage of palms, issues in remittance in premium, etc. are analysed in this section.

#### 2.3.1. Information about CPIS

The respondents from three regions were asked about the source from which they got information on the CPIS. They were given five options viz. Agriculture/Horticulture office, Friends/relatives, Agriculture Insurance Corporation (AIC), Coconut Development Board (CDB) or other sources. The results are presented in Table 2.2. Irrespective of region, agriculture/horticulture office (as the case may be) was the main source of information about CPIS for majority of growers as more than 85 percent of respondents in each region opined accordingly. Here, it is pertinent to mention that as the majority of growers are connected with this scheme through the respective agriculture/horticulture office in their area, steps may be taken to conduct more marketing of the scheme so as to create awareness among the growers as well as to give more training and incentive to the officials so as to enable them to undertake the

activities relating to insuring, claiming and settlement in a smooth and time bound manner. Steps should also be taken to analyse the difficulties/hurdles faced by the field staffs with regard to marketing/collection of premium/claiming etc. as they are considered to be the linchpin of this innovative scheme which they play a crucial role. Success of the scheme depends largely on the field staffs and hence their grievance and concern need to be properly addressed which, in turn, would help the scheme to move to new heights. This would ensure further welfare of the growers.

Table 2.2 Source of information about CPIS

| Region               | Source of information (in percentage) |         |     |      |       |
|----------------------|---------------------------------------|---------|-----|------|-------|
|                      | Agri./horticulture Office             | Friends | AIC | CDB  | Other |
| Goa-Maharashtra      | 100                                   | 21.3    | 4   | 2.7  | 18.7  |
| Karnataka-Tamil Nadu | 88                                    | 12      | 2.7 | 14.7 | 13.3  |
| Kerala               | 95                                    | 10.3    | 1.6 | 2.6  | 11.4  |

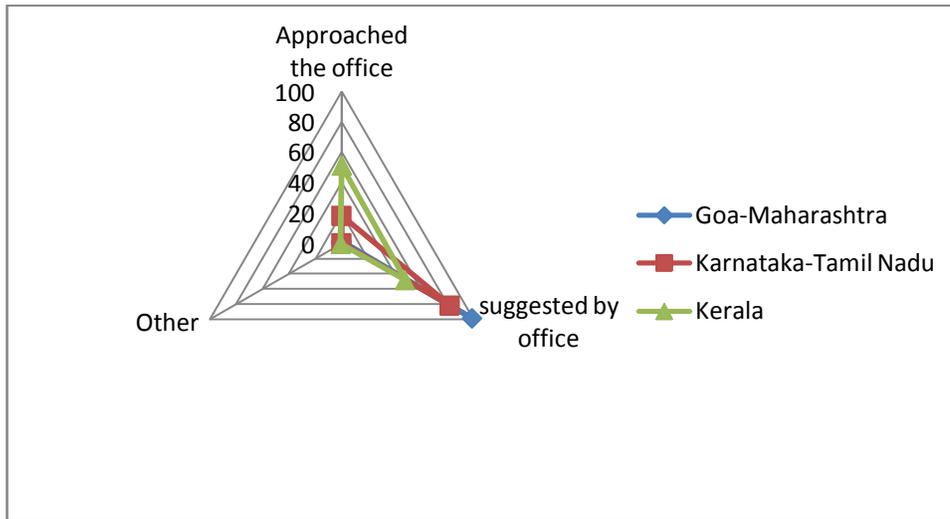
Source: Survey data (2011-12)

Note: multiple response sets - percentages may add up to more than 100

### 2.3.2. Subscription to the scheme

The growers were asked to mark how they subscribed to the CPIS and the same is shown in Appendix 2.5 and Figure 2.5. Majority (98.7 percent) from Goa-Maharashtra joined the scheme as per the solicitation by the Agriculture/Horticulture/CDB officials to join the scheme. The number of persons approaching the office to join by themselves and the office suggesting them to join is almost equal in Kerala region (50.84 percent and 48.32 percent respectively). 82.05 percent in Karnataka-Tamil Nadu joined the scheme because they were solicited by the concerned officials to do so.

Figure 2.5 Subscriptions to CPIS



Source: Worked out from Appendix 2.5

### 2.3.3. Age of palms

Palms can be classified into two age categories, viz. 4-15 years and 16-60 years. Age of the palm is a determining factor in fixing the premium as well as compensation. Table 2.3 illustrates the region-wise classification of age of palms. It can be inferred from Table 2.3 that in Goa-Maharashtra, 40 percent of respondents having palms between the age group of 16-60 have more than 100 palms, whereas 40 percent of those having palms in 4-15 years age group have between 10 and 100 palms. In Karnataka-Tamil Nadu, the majority have 16-60 year old palms. 56 percent of those holding 16-60 year old palms have more than 100 palms. In Kerala, however, 70.1 percent and 37.8 percent of farmers having 16 to 60 years old and 4 to 15 years old palms are having less than 50 palms.

Table 2.3 Age of palms

| Number of palms | Goa-Maharashtra |          | Karnataka-Tamil Nadu |          | Kerala  |          |
|-----------------|-----------------|----------|----------------------|----------|---------|----------|
|                 | 4 to 15         | 16 to 60 | 4 to 15              | 16 to 60 | 4 to 15 | 16 to 60 |
| Nil             | 52              | 10.67    | 73.3                 | 17.3     | 59.5    | 3.2      |
| below 50        | 20              | 20       | 6.7                  | 13.3     | 37.8    | 70.1     |
| 50 to 100       | 20              | 29.33    | 4                    | 13.4     | 1.9     | 18.5     |
| above 100       | 8               | 40       | 16                   | 56       | 0.8     | 8.2      |
| Total           | 100             | 100      | 100                  | 100      | 100     | 100      |

Source: Survey data (2011-12)

### 2.3.4. Reasons for dislikes for CPIS

It is evident from Table 2.4 that the majority of the respondents like the CPIS. However, the ratio is less in Kerala compared to other regions due to the availability of alternate schemes. In Karnataka-Tamil Nadu region, 93.3 percent like CPIS. Across the regions, the growers find the insuring the palms against risk of loss as an important protective mechanism. However, senseless stipulations, availability of better alternate scheme<sup>2</sup> etc. were the major reasons for disliking the CPIS (see Table 2.4).

Table 2.4 Like CPIS and Reasons for dislike

| Region               | Like CPIS |     | Total | Reason for disliking (in percent)* |                      |                        |       |
|----------------------|-----------|-----|-------|------------------------------------|----------------------|------------------------|-------|
|                      | yes       | no  |       | ineffective scheme                 | Other better schemes | Senseless stipulations | Other |
| Goa-Maharashtra      | 76        | 24  | 100   | 88.2                               | 0                    | 70.6                   | 76.5  |
| Karnataka-Tamil Nadu | 93.3      | 6.7 | 100   | 80                                 | 0                    | 100                    | 40    |
| Kerala               | 66.7      | 33  | 100   | 72.6                               | 28.3                 | 62.4                   | 19    |

Source: Survey data (2011-12)

\*multiple response sets - percentages may add up to more than 100

### 2.3.5. Coverage of insurance

As per Table 2.5, all the palms of the majority of respondents are covered under insurance. Inter-regional breakup of the data also shows similar results. However, compared to other two regions, Kerala has the least percentage of respondents who have insured all the bearing palms (i.e. 70.4 percent). This is due to the availability of an alternate scheme. However, in general, those who did not go for the insurance scheme have unhealthy palms, senile palms and palms below four years (see Table 2.5).

<sup>2</sup> In the case of Kerala as state scheme for insuring the palms with better and attractive terms and conditions as well as due to better prospects of getting the claim settlement and in as much as this, some of the respondents dislike CPIS

Table 2.5 Coverage of CPIS and reasons for not covering

| Region               | Coverage |      | Total | Reason for not covering (in percent)* |           |        |       |
|----------------------|----------|------|-------|---------------------------------------|-----------|--------|-------|
|                      | yes      | no   |       | Below 4 years                         | Unhealthy | Senile | Other |
| Goa-Maharashtra      | 89.3     | 10.7 | 100   | 10                                    | 10        | 10     | 50    |
| Karnataka-Tamil Nadu | 97.3     | 2.7  | 100   | 100                                   | 0         | 0      | 0     |
| Kerala               | 70.4     | 29.6 | 100   | 1                                     | 25        | 30     | 53    |

Source: Survey data (2011-12)

multiple response sets - percentages may add up to more than 100

## 2.4. Functioning of CPIS

### 2.4.1. Loss of palms after insuring and reason for loss

Most of respondents in Karnataka-Tamil Nadu and Kerala regions (73.3 percent and 82 percent respectively) have lost palms after insuring, whereas in Goa-Maharashtra region, only 49.3 percent have lost palms (Table 2.6). Major reasons for loss of palm identified were storm, lightning, heavy rains, various kinds of pests and diseases, etc. In Goa-Maharashtra region, the major reasons for the loss were pests and diseases together with storm and rain. However, in Kerala region, respondents recorded accidental fire (including forest fire) also as one of the reasons for loss of palms together with pests and rains. Reasons for loss of palms are showed in Table 2.6.

Table 2.6 Loss of palm and reasons for loss

| Region               | Loss of palm |    |       | Reason for loss* |       |                    |      |             |                |
|----------------------|--------------|----|-------|------------------|-------|--------------------|------|-------------|----------------|
|                      | yes          | no | Total | heavy rains      | Flood | Pests and diseases | fire | Earth quake | Severe drought |
| Goa-Maharashtra      | 49           | 51 | 100   | 24.3             | 0     | 83.8               | 0    | 0           | 0              |
| Karnataka-Tamil Nadu | 73           | 27 | 100   | 45.5             | 0     | 85.5               | 0    | 0           | 0              |
| Kerala               | 82           | 18 | 100   | 13.6             | 0.3   | 82.5               | 23.9 | 0.3         | 0              |

Source: Survey data (2011-12)

\* multiple response sets - percentages may add up to more than 100

## 2.4.2. Issues in remittance of premium

Respondents were asked whether they faced any problems in remittance of premium. The majority of them did not face any issues in remitting the premium as given in Table 2.7. However, the respondents in Tamil Nadu-Karnataka region argued for more premium payment modes/options such as provision to pay three years premium in advance. In Kerala, the major problem is small holding of land together with financial constraints. Here, it is pertinent to mention that the insurance scheme made available by the state government gives an option either to pay yearly premium or to pay three years premium in advance. In addition to this, special rebates are also given for the growers. Annual premium payment mode should be continued and this option should be given separately for interested growers to pay advance premium. Other than helping those growers who wish to pay their premium in advance, this option will facilitate the smooth functioning of the office of the Agriculture/Horticulture. It will also reduce the workload and burden of field and other staffs involved in inspection and paper work in relation to premium collection.

Table 2.7 Issues with remittance of premium

| Region               | Premium remittance issues |      | Total |
|----------------------|---------------------------|------|-------|
|                      | yes                       | no   |       |
| Goa-Maharashtra      | 1.3                       | 98.7 | 100   |
| Karnataka-Tamil Nadu | 0                         | 100  | 100   |
| Kerala               | 1.3                       | 98.7 | 100   |

Source: Survey data (2011-12)

## 2.4.3. Claim settlement and adequacy of Compensation

### 2.4.3.1. Claims made

Goa-Maharashtra region shows the lowest claim rate of 24 percent. 72 percent of the respondents have made claims in Karnataka-Tamil Nadu region and 49.7 percent in Kerala region (Table 2.8). The percentage of respondents' claim is the highest in Karnataka-Tamil Nadu region and the lowest in Goa-Maharashtra region.

Table 2.8 Claims made

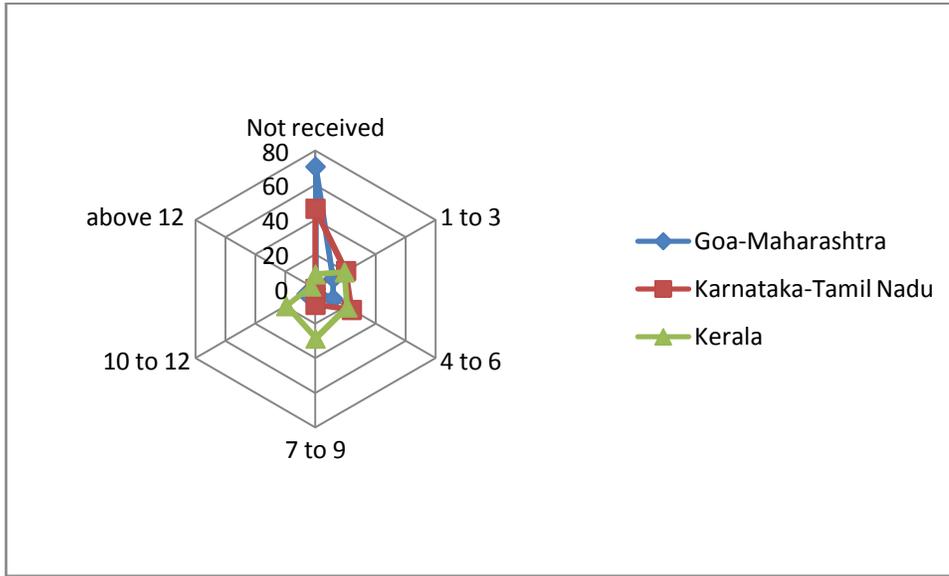
| Region               | Claims made |      | Total |
|----------------------|-------------|------|-------|
|                      | yes         | no   |       |
| Goa-Maharashtra      | 24          | 76   | 100   |
| Karnataka-Tamil Nadu | 72          | 28   | 100   |
| Kerala               | 49.7        | 50.3 | 100   |

Source: Survey data (2011-12)

### 2.4.3.2. Time for settling claim

Time taken to settle the claim is one of the important factors determining the success of the scheme. More time for settlement or non-settlement of claims will adversely affect the implementation of the scheme as growers may show disinterest to continue because their claims were not settled on time or not settled at all. Out of the respondents who had made claims, 70.6 percent and 46.3 percent respectively of Goa-Maharashtra and Karnataka-Tamil Nadu regions have not received any compensation. In Kerala, more than 20 percent of the respondents had to wait for 10 months or above to get compensation. Detailed tabular representation is given in Appendix 2.6. Majority (72 percent) of the respondents in Kerala region had to wait for more than 4 months to get the claim settled. However, only 8.6 percent have not got their claims settled in Kerala region, which is the lowest compared to other two regions. The inferences are further reiterated using Figure 2.6. Even though period of settlement is longer in Kerala, the probability of settlement is also higher compared to other regions. More waiting time may be due to the procedural delay in settlement, insufficient staffing, heavy workload of officials, engagement of staff for other duties, etc. Longer waiting time/non-settlement of claims will affect replanting of the palms adversely. The scheme intends to equip the farmers to replant and make up the loss incurred in due course and hence any delay or non-payment of compensation is against the very objective of the scheme. It is also equally true in stating like the proverbial statement ‘justice delayed is justice denied’, ‘compensation delayed is compensation denied’.

Figure 2.6 Waiting time for getting compensation



Source: Worked out from Appendix 2.6

### 2.4.3.3. Adequacy of Compensation

Regarding the adequacy of the insurance in meeting the loss (Table 2.9), majority in Goa-Maharashtra are of the opinion that the compensation amount is inadequate to meet the loss incurred. Once a new palm is planted, it will yield fruits only after a period of 4-7 years and hence they will not get any returns during that period. Compensation amount does not take into account the loss of income to the farmer due to the loss of palm as well as the cost of replanting the same. It was also observed during the field investigation that the yield per palm in Goa-Maharashtra region is much higher compared to other regions, possibly due to better irrigation facilities and fertility of land. Hence, each and every palm is precious for them and the resultant loss makes a lot of financial and other hardships, therefore the respondents of this region feel that the compensation amount is inadequate to meet the loss. It is pertinent to note that increase in the compensation amount for high yielding areas, will act as a catalyst for higher participation as well as to sustain the yield. In Kerala, 44.16 percent feel that the compensation amount is adequate enough to meet the loss incurred, may be due to the receipt of compensation from other schemes.

Table 2.9 Adequacy to meet the loss

| Region               | Adequacy to meet the loss |       | Total |
|----------------------|---------------------------|-------|-------|
|                      | yes                       | no    |       |
| Goa-Maharashtra      | 11.1                      | 88.9  | 100   |
| Karnataka-Tamil Nadu | 55.17                     | 44.83 | 100   |
| Kerala               | 44.16                     | 55.84 | 100   |

Source: Survey data (2011-12)

#### 2.4.4. Replanting

The idea of the CPIS is to equip the growers to replant the lost palm. But, contrary to this, the majority of the growers in Goa-Maharashtra region were of the opinion that the insurance scheme did not render any help or support to them for replanting the palm. This may be due to the fact that 70.6 percent of the respondents of this region have not received any compensation for the claim they have made. The compensation is, in effect, confined to the lost palm and the cost of replanting the palm need to be borne by the farmers, which is much higher than the compensation they receive. Adding to their trouble is the fact that new palm will yield them benefits from 4-7 years. Loss of palm means more expenses as well as loss of income to the farmer. In Karnataka-Tamil Nadu region, the growers have not replanted due to the lack of irrigation facilities. The respondents in this region are waiting for the right time i.e. monsoon for replanting. 51.73 percent in Karnataka-Tamil Nadu and 66.6 percent in Kerala region opined that the compensation is adequate to replant the palm. The detail of this is given in Table 2.10.

Table 2.10 Replanting the palm

| Region               | Replanting the palm |       | Total |
|----------------------|---------------------|-------|-------|
|                      | yes                 | no    |       |
| Goa-Maharashtra      | 0                   | 100   | 100   |
| Karnataka-Tamil Nadu | 51.73               | 48.28 | 100   |
| Kerala               | 66.6                | 33.3  | 100   |

Source: Survey data (2011-12)

#### 2.4.5. Necessity of CPIS

The respondents were asked whether there is a need for the insurance scheme for coconut palms. The majority were of the opinion that the scheme is necessary for coconut palm as it will reduce the risk of loss of palms due to calamities like rain, lightning, etc. which is a common feature (Table 2.11). Loss of a palm causes a lot of hardships and troubles to the grower and providing some kind of relief in the form of compensation for the unforeseen events is a step in the right direction. Field investigation shows that a loss of 3-4 palms a year is common to the grower (especially for those with more than 100-150 palms) and hence they consider that insurance is necessary. However, the percentage of respondents considering palm insurance are proportionately less in Kerala possibly due to the availability of financial assistance from government sources in the event of death of palm, in which there is no need to pay any premium.

Table 2.11 Necessity of insurance

| Region               | Necessity of insurance |      | Total |
|----------------------|------------------------|------|-------|
|                      | yes                    | no   |       |
| Goa-Maharashtra      | 92                     | 8    | 100   |
| Karnataka-Tamil Nadu | 93.3                   | 6.7  | 100   |
| Kerala               | 74.8                   | 25.2 | 100   |

Source: Survey data (2011-12)

#### 2.4.6. Improvement of CPIS

It is obvious from Table 2.12 that the majority of respondents want an improved CPIS scheme some way or the other. 68.1 percent in Goa-Maharashtra region, 82.9 percent in Karnataka-Tamil Nadu region and 77.3 in Kerala opined that CPIS should be improved. The majority of the sample respondents want the scheme to be fine tuned so that it could be made more effective. The respondents were also asked to provide their suggestions to make this scheme better, which are discussed in the subsequent sections. In Kerala region, the majority voiced for merging of CPIS with the state insurance scheme. Most of the respondents across regions cite the necessity for making terms and conditions rational. Long duration for claim settlement was yet another

issue identified by the growers which needs to be resolved. The growers also stipulate the necessity for more active participation from the authorities (both insurance company and agriculture/horticulture officials concerned) in conducting periodic field visits awareness programmes, interim evaluations, etc. of the farms.

Table 2.12 Improvement of CPIS

| Region               | Improvement of CPIS |      | Total |
|----------------------|---------------------|------|-------|
|                      | yes                 | no   |       |
| Goa-Maharashtra      | 68.1                | 31.9 | 100   |
| Karnataka-Tamil Nadu | 82.9                | 17.1 | 100   |
| Kerala               | 77.3                | 22.7 | 100   |

Source: Survey data (2011-12)

#### 2.4.7. Continuation of CPIS

From Table 2.13, it can be inferred that more than 75 percent of respondents in all regions want the CPIS to continue. In Karnataka-Tamil Nadu, almost 91 percent want this scheme to continue so that they can get some kind of relief when they loss the palms due to unanticipated events. The prevalence of a better alternate scheme may be the reasons for lesser percentage of growers in Kerala region suggesting the scheme to continue.

Table 2.13 Continuation of CPIS

| Region               | Continuation of CPIS |      | Total |
|----------------------|----------------------|------|-------|
|                      | yes                  | no   |       |
| Goa-Maharashtra      | 84.0                 | 16.0 | 100   |
| Karnataka-Tamil Nadu | 90.7                 | 9.3  | 100   |
| Kerala               | 77.3                 | 22.7 | 100   |

Source: Survey data (2011-12)

#### 2.5. Drawbacks of CPIS

Growers were asked to provide their opinion on major drawbacks of CPIS identified by them. From among the twenty or more drawbacks identified by the growers 12 drawbacks most frequently suggested by the respondents were identified. Based on factor analysis done in the

three regions these were categorized into three reduced factors viz. issues with scheme particulars, issues with communication and issues with claiming procedures.

Variables identified and their categorization is depicted in Table 2.14. Region-wise factor analysis performed for the 12 variables are discussed in this section. Region-wise analysis identified specific drawbacks of CPIS. Across all regions, KMO measure of sample adequacy shows a value of greater than .5 and hence recommends the analysis to proceed. Bartlett's Test is also significant and its associated probability is less than .05. Results of KMO and Bartlett's Test are portrayed in Table 2.15.

Table 2.14 Drawbacks of CPIS – factors identified

| Factor                                                       | Component     |
|--------------------------------------------------------------|---------------|
| Insufficient amount                                          | Scheme        |
| ineffective scheme                                           | Scheme        |
| No proper communication from Agriculture/Horticulture office | Communication |
| No proper communication from AIC                             | Communication |
| No Proper information about CPIS                             | Communication |
| Difficult Claim Procedure                                    | Claim         |
| Franchise limit                                              | Scheme        |
| Delay in Settlement                                          | Claim         |
| Doesn't cover all palms                                      | Scheme        |
| limited time bound for claiming                              | Scheme        |
| No follow-ups by authority                                   | Communication |
| 100% compensation is not given                               | Scheme        |

Source: Survey data (2011-12)

Table 2.15 KMO and Bartlett's Test - drawbacks

| Test                                                   |                           | Kerala | Goa-<br>Maharashtra | Karnataka-<br>Tamil Nadu |
|--------------------------------------------------------|---------------------------|--------|---------------------|--------------------------|
| Kaiser-Meyer-Olkin<br>Measure of<br>Sampling Adequacy. |                           | 0.515  | 0.589               | 0.521                    |
| Bartlett's<br>Test of<br>Sphericity                    | Approx.<br>Chi-<br>Square | 673.54 | 374.898             | 267.196                  |
|                                                        | df                        | 66     | 66                  | 66                       |
|                                                        | Sig.                      | 0      | 0                   | 0                        |

### 2.5.1. Drawbacks identified in Kerala Region

Communalities in Table 2.16 give the variability in a particular variable accounted for by all factors extracted by the factor analysis.

**Table 2.16 Communalities – Kerala drawbacks**

|                                                              | Initial | Extraction |
|--------------------------------------------------------------|---------|------------|
| Insufficient amount                                          | 1.000   | 0.693      |
| ineffective scheme                                           | 1.000   | 0.601      |
| No proper communication from Agriculture/Horticulture office | 1.000   | 0.506      |
| No proper communication from AIC                             | 1.000   | 0.689      |
| No Proper information about CPIS                             | 1.000   | 0.522      |
| Difficult Claim Procedure                                    | 1.000   | 0.539      |
| Franchise limit                                              | 1.000   | 0.701      |
| Delay in Settlement                                          | 1.000   | 0.596      |
| Doesn't cover all palms                                      | 1.000   | 0.497      |
| limited time bound for claiming                              | 1.000   | 0.568      |
| No follow-ups by authority                                   | 1.000   | 0.395      |
| 100% compensation is not given                               | 1.000   | 0.264      |

Extraction Method: Principal Component Analysis.

**Table 2.17 Variance Explained– Kerala drawbacks**

| Component | Initial Eigenvalues |               |              | Extraction Sums of Squared Loadings |               |              |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|
|           | Total               | % of Variance | Cumulative % | Total                               | % of Variance | Cumulative % |
| 1         | 3.346               | 27.883        | 27.883       | 3.346                               | 27.883        | 27.883       |
| 2         | 1.873               | 15.608        | 43.492       | 1.873                               | 15.608        | 43.492       |
| 3         | 1.252               | 10.433        | 53.925       | 1.252                               | 10.433        | 53.925       |
| 4         | 1.126               | 9.383         | 63.308       | 1.126                               | 9.383         | 63.308       |

Extraction Method: Principal Component Analysis.

a. Extracted Eigenvalue above 1

The variables extracted are shown in Table 2.17. 4 factors have an Eigen value of 1 or more than 1 and these four factors explain about 63 percent of the total variance.

**Table 2.18 Component Matrix<sup>a</sup> – Kerala drawbacks**

|                                                              | Component |        |        |        |
|--------------------------------------------------------------|-----------|--------|--------|--------|
|                                                              | 1         | 2      | 3      | 4      |
| Insufficient amount                                          | 0.823     | 0.102  | -0.063 | -0.025 |
| ineffective scheme                                           | 0.698     | 0.232  | -0.214 | 0.123  |
| No proper communication from Agriculture/Horticulture office | -0.042    | 0.121  | 0.663  | 0.223  |
| No proper communication from AIC                             | -0.116    | -0.406 | 0.587  | 0.407  |
| No Proper information about CPIS                             | 0.590     | 0.037  | 0.402  | -0.106 |
| Difficult Claim Procedure                                    | -0.291    | 0.596  | 0.302  | -0.085 |
| Franchise limit                                              | 0.634     | -0.470 | -0.278 | -0.027 |
| Delay in Settlement                                          | 0.670     | 0.351  | -0.119 | 0.100  |
| Doesn't cover all palms                                      | 0.557     | 0.216  | -0.259 | 0.272  |
| limited time bound for claiming                              | -0.214    | 0.688  | -0.040 | 0.216  |
| No follow-ups by authority                                   | -0.319    | 0.195  | 0.407  | 0.299  |
| 100% compensation is not given                               | 0.356     | 0.211  | -0.136 | -0.271 |

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

Component matrix is depicted in Table 2.18. The first factor may be aptly termed as Scheme Particulars; the second as claiming particulars and the third factor as communication particulars. If the first factor is analysed, it can be identified that insufficiency in compensation is main drawback identified with the CPIS, followed by ineffective scheme which is mainly due to the terms and conditions of the CPIS. Franchise is limit and non-coverage of all palms are the third and fourth variables on which the first factor has higher loading. Claiming particulars such as limited time bound for claiming and difficulty in procedures constitute the second factor. Lack of communication and follow-ups from the part of officials concerned and lack of information about the CPIS are major reasons can be clubbed together to understand the third factor. Main issue of CPIS in Kerala is with regard to the scheme particulars. Respondents of this region have some issues with the scheme particulars/conditions. Second major issue is with regard to the procedure of claiming and subsequent settlement process. Third issue is with regard to the lack of communication between the farmer and the authorities concerned.

## 2.5.2. Drawbacks identified in Goa-Maharashtra Region

Communalities in Table 2.19 depict the give the variability in a particular variable accounted for by all factors extracted by the factor analysis. In Table 2.20, the variables extracted are 5 as they are above the Eigen value 1 and these 5 factors explain about 66 percent of the total variance. Table 2.21 shows the component matrix. The first factor in the case of Goa may also be termed Scheme Particulars as variables like non-payment of 100 percent compensation, insufficiency in amount, non-coverage of all palms, ineffectiveness of the scheme and franchise limit have the highest loading on this factor. Second factor can be claiming particulars. Based on grower's opinion, delay in settlement and difficulty in claim procedure get the highest factor loading in the second factor. Third factor may be called communication as variables such as lack of follow-ups by the authorities, lack of information about CPIS and lack of communication from the official concerned claim the highest loading on this factor.

**Table 2.19 Communalities– Goa-Maharashtra drawbacks**

|                                                              | Initial | Extraction |
|--------------------------------------------------------------|---------|------------|
| Insufficient amount                                          | 1       | 0.938      |
| ineffective scheme                                           | 1       | 0.619      |
| No proper communication from Agriculture/Horticulture office | 1       | 0.819      |
| No proper communication from AIC                             | 1       | 0.748      |
| No Proper information about CPIS                             | 1       | 0.791      |
| Difficult Claim Procedure                                    | 1       | 0.736      |
| Franchise limit                                              | 1       | 0.839      |
| Delay in Settlement                                          | 1       | 0.721      |
| Doesn't cover all palms                                      | 1       | 0.689      |
| limited time bound for claiming                              | 1       | 0.817      |
| No follow-ups by authority                                   | 1       | 0.782      |
| 100% compensation is not given                               | 1       | 0.912      |

Extraction Method: Principal Component Analysis.

**Table 2.20 Total Variance Explained– Goa-Maharashtra drawbacks**

| Component | Initial Eigenvalues |               |              | Extraction Sums of Squared Loadings |               |              |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|
|           | Total               | % of Variance | Cumulative % | Total                               | % of Variance | Cumulative % |
| 1         | 2.667               | 22.225        | 22.225       | 2.667                               | 22.225        | 22.225       |
| 2         | 1.762               | 14.683        | 36.908       | 1.762                               | 14.683        | 36.908       |
| 3         | 1.306               | 10.883        | 47.792       | 1.306                               | 10.883        | 47.792       |
| 4         | 1.149               | 9.575         | 57.367       | 1.149                               | 9.575         | 57.367       |
| 5         | 1.004               | 8.367         | 65.733       | 1.004                               | 8.367         | 65.733       |

Extraction Method: Principal Component Analysis.

- a. Extracted Eigenvalue above 1

**Table 2.21 Component Matrix<sup>a</sup>– Goa-Maharashtra drawbacks**

|                                                              | Component |        |        |        |        |
|--------------------------------------------------------------|-----------|--------|--------|--------|--------|
|                                                              | 1         | 2      | 3      | 4      | 5      |
| Insufficient amount                                          | 0.707     | 0.375  | -0.300 | 0.150  | -0.431 |
| ineffective scheme                                           | 0.576     | -0.171 | 0.308  | 0.044  | 0.401  |
| No proper communication from Agriculture/Horticulture office | -0.514    | 0.067  | 0.624  | 0.391  | 0.091  |
| No proper communication from AIC                             | 0.306     | -0.294 | 0.677  | 0.147  | -0.297 |
| No Proper information about CPIS                             | -0.536    | 0.290  | 0.558  | 0.276  | -0.180 |
| Difficult Claim Procedure                                    | 0.048     | 0.548  | -0.463 | -0.464 | 0.061  |
| Franchise limit                                              | 0.574     | -0.490 | -0.247 | 0.289  | 0.353  |
| Delay in Settlement                                          | -0.203    | 0.660  | -0.069 | 0.443  | 0.208  |
| Doesn't cover all palms                                      | 0.592     | 0.104  | -0.567 | 0.059  | 0.047  |
| limited time bound for claiming                              | 0.164     | 0.614  | 0.313  | 0.269  | 0.492  |
| No follow-ups by authority                                   | 0.147     | 0.360  | 0.743  | -0.277 | -0.051 |
| 100% compensation is not given                               | 0.806     | 0.247  | -0.271 | -0.178 | 0.310  |

Extraction Method: Principal Component Analysis.

a. 5 components extracted.

### 2.5.3. Drawbacks identified in Karnataka-Tamil Nadu region

Communalities in Table 2.22 give the variability in a particular variable accounted for by all factors extracted by the factor analysis. In Table 2.23, 5 extracted variables show an Eigen value above 1 and the variables explains 78 percent of the total variance.

**Table 2.22 Communalities- Karnataka-Tamil Nadu drawbacks**

|                                                              | Initial | Extraction |
|--------------------------------------------------------------|---------|------------|
| Insufficient amount                                          | 1.000   | 0.785      |
| ineffective scheme                                           | 1.000   | 0.536      |
| No proper communication from Agriculture/Horticulture office | 1.000   | 0.648      |
| No proper communication from AIC                             | 1.000   | 0.823      |
| No Proper information about CPIS                             | 1.000   | 0.833      |
| Difficult Claim Procedure                                    | 1.000   | 0.786      |
| Franchise limit                                              | 1.000   | 0.596      |
| Delay in Settlement                                          | 1.000   | 0.768      |
| Doesn't cover all palms                                      | 1.000   | 0.743      |
| limited time bound for claiming                              | 1.000   | 0.817      |
| No followups by authority                                    | 1.000   | 0.781      |
| 100% compensation is not given                               | 1.000   | 0.829      |

Extraction Method: Principal Component Analysis.

**Table 2.23 Total Variance Explained - Karnataka-Tamil Nadu drawbacks**

| Component | Initial Eigenvalues |               |              | Extraction Sums of Squared Loadings |               |              |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|
|           | Total               | % of Variance | Cumulative % | Total                               | % of Variance | Cumulative % |
| 1         | 2.983               | 24.858        | 24.858       | 2.983                               | 24.858        | 24.858       |
| 2         | 2.384               | 19.867        | 44.725       | 2.384                               | 19.867        | 44.725       |
| 3         | 1.633               | 13.608        | 58.333       | 1.633                               | 13.608        | 58.333       |
| 4         | 1.316               | 10.967        | 69.300       | 1.316                               | 10.967        | 69.300       |
| 5         | 1.053               | 8.775         | 78.075       | 1.053                               | 8.775         | 78.075       |

Extraction Method: Principal Component Analysis.

a. Extracted Eigenvalue above 1

**Table 2.24 Component Matrix<sup>a</sup>- Karnataka-Tamil Nadu drawbacks**

|                                                              | Component |        |        |        |        |
|--------------------------------------------------------------|-----------|--------|--------|--------|--------|
|                                                              | 1         | 2      | 3      | 4      | 5      |
| Insufficient amount                                          | 0.725     | 0.336  | -0.159 | -0.013 | 0.347  |
| ineffective scheme                                           | 0.614     | -0.284 | 0.279  | -0.029 | -0.023 |
| No proper communication from Agriculture/Horticulture office | -0.312    | 0.579  | -0.371 | -0.152 | 0.233  |
| No proper communication from AIC                             | -0.384    | 0.634  | 0.495  | 0.094  | -0.143 |
| No Proper information about CPIS                             | -0.314    | 0.673  | -0.449 | 0.205  | 0.194  |
| Difficult Claim Procedure                                    | 0.322     | -0.444 | 0.506  | 0.362  | 0.312  |
| Franchise limit                                              | 0.681     | 0.001  | -0.186 | 0.016  | 0.312  |
| Delay in Settlement                                          | -0.106    | 0.182  | 0.712  | 0.116  | -0.45  |
| Doesn't cover all palms                                      | 0.635     | -0.193 | -0.223 | 0.136  | 0.485  |
| limited time bound for claiming                              | -0.121    | 0.248  | 0.744  | 0.392  | 0.183  |
| No followups by authority                                    | 0.01      | 0.729  | 0.229  | -0.199 | -0.398 |
| 100% compensation is not given                               | 0.634     | 0.522  | 0.056  | 0.388  | 0.001  |

Extraction Method: Principal Component Analysis.

a. 5 components extracted.

Issues with scheme particulars, followed by communication issues are identified as factors 1 and 2, respectively, by the respondents of Karnataka-Tamil Nadu region. The third factor is comprised of the claiming particulars. The component matrix derived from the analysis is depicted in Table 2.24. Compared to the first two regions, there is difference in the perception of respondents in Karnataka-Tamil Nadu region as they have identified the communication issues as the second major drawback of the CPIS.

## 2.6. Suggestions for improving CPIS

Growers were asked to provide suggestions for the effectiveness and improvement of CPIS. 12 suggestions were classified into three reduced factors viz. suggestions with regard to scheme particulars, communication and claiming procedures, respectively. Factor analysis was performed to identify the rank of these components. Variables identified and their categorization

is depicted in Table 2.25. Region-wise factor analysis performed for the 12 variables are discussed in this section. Across all regions, KMO measure of sample adequacy shows a value of greater than .5 and hence recommends the analysis to proceed. Bartlett's Test is also significant and its associated probability is less than .05. Results of KMO and Bartlett's Test are portrayed in Table 2.26.

Table 2.25 Suggestions for the improvement of CPIS

| Suggestion                                                | Component     |
|-----------------------------------------------------------|---------------|
| Cover all palms                                           | Scheme        |
| Increase compensation amount                              | Scheme        |
| Early settlement                                          | Claim         |
| Increase claiming period                                  | Claim         |
| simplify claiming procedure                               | Claim         |
| Provide proper information about CPIS and its functioning | Communication |
| Frequent inspection/ follow-ups from AIC                  | Communication |
| Remove franchise limit                                    | Scheme        |
| popularize the scheme                                     | Communication |
| Subsidy for baby palms until they become matured          | Scheme        |
| lump sum premium for more tenure                          | Scheme        |
| 100% compensation                                         | Scheme        |

Source: Survey data (2011-12)

Table 2.26 KMO and Bartlett's Test - suggestions

| Test                                             |                    | Kerala  | Goa-<br>Maharashtra | Karnataka-<br>Tamil Nadu |
|--------------------------------------------------|--------------------|---------|---------------------|--------------------------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. |                    | 0.590   | 0.544               | 0.501                    |
| Bartlett's Test of Sphericity                    | Approx. Chi-Square | 959.118 | 259.367             | 251.889                  |
|                                                  | df                 | 66.000  | 66                  | 66                       |
|                                                  | Sig.               | 0.000   | .000                | .000                     |

### 2.6.1. Suggestions – Kerala region

In Table 2.27, communalities give the variability in a particular variable accounted for by all factors extracted by the factor analysis. 4 factors whose Eigen values above 1 are extracted (Table 2.28), which explains about 61 percent of total variance.

**Table 2.27 Communalities – Kerala suggestions**

|                                                            | Initial | Extraction |
|------------------------------------------------------------|---------|------------|
| Cover all palms                                            | 1       | 0.716      |
| Increase compensation amount                               | 1       | 0.795      |
| Early settlement                                           | 1       | 0.725      |
| Increase claiming period                                   | 1       | 0.565      |
| simplify claiming procedure                                | 1       | 0.595      |
| Provide proper information about CPIS and its functionings | 1       | 0.669      |
| Frequent inspection/ followups from AIC                    | 1       | 0.550      |
| Remove franchise limit                                     | 1       | 0.679      |
| popularise the scheme                                      | 1       | 0.458      |
| Subsidy for baby palms until they become matured           | 1       | 0.468      |
| lumpsum premium for more tenure                            | 1       | 0.446      |
| 100% compensation                                          | 1       | 0.527      |

Extraction Method: Principal Component Analysis.

**Table 2.28 Total Variance Explained– Kerala suggestions**

| Component | Initial Eigenvalues |               |              | Extraction Sums of Squared Loadings |               |              |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|
|           | Total               | % of Variance | Cumulative % | Total                               | % of Variance | Cumulative % |
|           | 1                   | 3.095         | 25.792       | 25.792                              | 3.095         | 25.792       |
| 2         | 1.624               | 13.533        | 39.325       | 1.624                               | 13.533        | 39.325       |
| 3         | 1.444               | 12.033        | 51.358       | 1.444                               | 12.033        | 51.358       |
| 4         | 1.122               | 9.350         | 60.708       | 1.122                               | 9.350         | 60.708       |

Extraction Method: Principal Component Analysis.

a. Extracted Eigenvalue above 1

**Table 2.29 Component Matrix<sup>a</sup>– Kerala suggestions**

|                                                            | Component |        |        |        |
|------------------------------------------------------------|-----------|--------|--------|--------|
|                                                            | 1         | 2      | 3      | 4      |
| Cover all palms                                            | 0.515     | -0.445 | -0.49  | -0.112 |
| Increase compensation amount                               | 0.705     | -0.499 | 0.193  | 0.109  |
| Early settlement                                           | -0.055    | 0.797  | 0.292  | -0.042 |
| Increase claiming period                                   | -0.379    | 0.636  | 0.037  | -0.123 |
| simplify claiming procedure                                | -0.045    | 0.721  | 0.269  | -0.029 |
| Provide proper information about CPIS and its functionings | 0.248     | -0.029 | 0.768  | 0.131  |
| Frequent inspection/ followups from AIC                    | 0.077     | -0.054 | 0.723  | 0.135  |
| Remove franchise limit                                     | 0.528     | 0.346  | -0.465 | 0.254  |
| popularise the scheme                                      | -0.262    | 0.243  | 0.574  | 0.039  |
| Subsidy for baby palms until they become matured           | 0.634     | -0.110 | -0.218 | 0.081  |
| lumpsum premium for more tenure                            | 0.537     | 0.109  | -0.27  | 0.27   |
| 100% compensation                                          | 0.592     | -0.091 | 0.031  | 0.409  |

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

In the first component, majority of loadings are covered by Scheme Particulars; followed by the claiming particulars in the second component and the third component is comprised communication particulars. Major suggestions provided were to increase the compensation amount, subsidize new palms, payment of 100 percent compensation, lump sum premium for more tenure, removal of franchise limit and coverage of all palms. Suggestions in component 2 comprised of early settlement, simplification of claim procedures and increasing claiming period. Suggestions with regard to communication are shown as component 3, which include providing information about CPIS and its functioning, follow-ups by the AIC and popularizing the scheme.

### 2.6.2. Suggestions – Goa-Maharashtra region

In Table 2.30, communalities give the variability in a particular variable accounted for by all factors extracted by the factor analysis. 5 variables are extracted (Table 2.31), which explains about 80 percent of total variance.

**Table 2.30 Communalities – Goa-Maharashtra suggestions**

|                                                             | Initial | Extraction |
|-------------------------------------------------------------|---------|------------|
| Cover all palms                                             | 1       | 0.847      |
| Increase compensation amount                                | 1       | 0.745      |
| Early settlement                                            | 1       | 0.733      |
| Increase claiming period                                    | 1       | 0.748      |
| simplify claiming procedure                                 | 1       | 0.728      |
| Provide proper information about CPIS and its functioning's | 1       | 0.807      |
| Frequent inspection/ follow-ups from AIC                    | 1       | 0.768      |
| Remove franchise limit                                      | 1       | 0.800      |
| popularise the scheme                                       | 1       | 0.568      |
| Subsidy for baby palms until they become matured            | 1       | 0.827      |
| lump sum premium for more tenure                            | 1       | 0.612      |
| 100% compensation                                           | 1       | 0.809      |

Extraction Method: Principal Component Analysis.

**Table 2.31 Total Variance Explained– Goa-Maharashtra suggestions**

| Component | Initial Eigenvalues |               |              | Extraction Sums of Squared Loadings |               |              |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|
|           | Total               | % of Variance | Cumulative % | Total                               | % of Variance | Cumulative % |
| 1         | 3.194               | 26.617        | 26.617       | 3.194                               | 26.617        | 26.617       |
| 2         | 2.432               | 20.267        | 46.883       | 2.432                               | 20.267        | 46.883       |
| 3         | 1.533               | 12.775        | 59.658       | 1.533                               | 12.775        | 59.658       |
| 4         | 1.232               | 10.267        | 69.925       | 1.232                               | 10.267        | 69.925       |
| 5         | 1.202               | 10.017        | 79.942       | 1.202                               | 10.017        | 79.942       |

Extraction Method: Principal Component Analysis.

a. Extracted Eigenvalue above 1

**Table 2.32 Component Matrix<sup>a</sup> – Goa-Maharashtra suggestions**

|                                                             | Component |        |        |        |        |
|-------------------------------------------------------------|-----------|--------|--------|--------|--------|
|                                                             | 1         | 2      | 3      | 4      | 5      |
| Cover all palms                                             | 0.647     | 0.287  | -0.565 | 0.010  | 0.165  |
| Increase compensation amount                                | 0.665     | 0.227  | 0.027  | 0.134  | 0.483  |
| Early settlement                                            | 0.368     | 0.620  | -0.130 | 0.402  | 0.185  |
| Increase claiming period                                    | 0.025     | 0.641  | -0.529 | 0.229  | -0.061 |
| simplify claiming procedure                                 | -0.480    | 0.609  | 0.251  | 0.010  | 0.252  |
| Provide proper information about CPIS and its functioning's | 0.036     | -0.013 | 0.728  | 0.037  | 0.524  |
| Frequent inspection/ follow-ups from AIC                    | -0.267    | -0.519 | 0.591  | -0.028 | 0.278  |
| Remove franchise limit                                      | 0.547     | -0.541 | 0.452  | -0.016 | -0.061 |
| popularise the scheme                                       | 0.025     | 0.024  | 0.730  | 0.006  | 0.182  |
| Subsidy for baby palms until they become matured            | 0.684     | 0.428  | 0.256  | 0.169  | -0.287 |
| lump sum premium for more tenure                            | 0.423     | 0.307  | -0.449 | -0.292 | -0.230 |
| 100% compensation                                           | 0.521     | 0.362  | 0.171  | 0.571  | -0.228 |

Extraction Method: Principal Component Analysis.

a. 5 components extracted.

In the first component, majority of loadings are covered by Scheme Particulars such as coverage of palms, compensation, franchise limit, etc.; followed by the claiming particulars like early settlement, claiming period and simplification of procedures involved in claiming, in the second component and the third component is comprised communication particulars. Major suggestions of the respondents in Goa-Maharashtra are with regard to scheme particulars and then claiming procedures and lastly with regard to improvement of communication about CPIS.

### **2.6.3. Suggestions – Karnataka-Tamil Nadu region**

Communalities give the variability in a particular variable accounted for by all factors extracted by the factor analysis in Table 2.33. 5 variables are identified with Eigen values above 1 explains 74.6% of the total variance are shown in Table 2.34.

**Table 2.33 Communalities – Karnataka-Tamil Nadu region suggestions**

|                                                             | Initial | Extraction |
|-------------------------------------------------------------|---------|------------|
| Cover all palms                                             | 1.00    | 0.748      |
| Increase compensation amount                                | 1.00    | 0.830      |
| Early settlement                                            | 1.00    | 0.769      |
| Increase claiming period                                    | 1.00    | 0.764      |
| simplify claiming procedure                                 | 1.00    | 0.791      |
| Provide proper information about CPIS and its functioning's | 1.00    | 0.853      |
| Frequent inspection/ follow-ups from AIC                    | 1.00    | 0.747      |
| Remove franchise limit                                      | 1.00    | 0.637      |
| popularise the scheme                                       | 1.00    | 0.521      |
| Subsidy for baby palms until they become matured            | 1.00    | 0.681      |
| lump sum premium for more tenure                            | 1.00    | 0.728      |
| 100% compensation                                           | 1.00    | 0.833      |

**Table 2.34 Total Variance Explained– Karnataka-Tamil Nadu region suggestions**

| Component | Initial Eigenvalues |               |              | Extraction Sums of Squared Loadings |               |              |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|
|           | Total               | % of Variance | Cumulative % | Total                               | % of Variance | Cumulative % |
| 1         | 3.939               | 32.825        | 32.825       | 3.939                               | 32.825        | 32.825       |
| 2         | 1.512               | 12.600        | 45.425       | 1.512                               | 12.600        | 45.425       |
| 3         | 1.369               | 11.408        | 56.833       | 1.369                               | 11.408        | 56.833       |
| 4         | 1.102               | 9.183         | 66.017       | 1.102                               | 9.183         | 66.017       |
| 5         | 1.031               | 8.592         | 74.608       | 1.031                               | 8.592         | 74.608       |

Extraction Method: Principal Component Analysis.

a. Extracted Eigenvalue above 1

**Table 2.35 Component Matrix<sup>a</sup>– Karnataka-Tamil Nadu region suggestions**

|                                                             | Component |        |        |        |        |
|-------------------------------------------------------------|-----------|--------|--------|--------|--------|
|                                                             | 1         | 2      | 3      | 4      | 5      |
| Cover all palms                                             | 0.649     | -0.258 | -0.327 | 0.329  | 0.211  |
| Increase compensation amount                                | 0.465     | -0.114 | -0.455 | 0.464  | 0.422  |
| Early settlement                                            | 0.585     | -0.227 | 0.318  | -0.487 | 0.194  |
| Increase claiming period                                    | 0.064     | -0.064 | 0.773  | 0.387  | -0.093 |
| simplify claiming procedure                                 | 0.473     | -0.011 | 0.679  | -0.263 | 0.191  |
| Provide proper information about CPIS and its functioning's | -0.526    | 0.560  | 0.199  | 0.274  | 0.384  |
| Frequent inspection/ follow-ups from AIC                    | 0.392     | 0.457  | -0.446 | 0.187  | 0.388  |
| Remove franchise limit                                      | 0.507     | -0.090 | 0.328  | -0.490 | -0.153 |
| popularise the scheme                                       | -0.381    | 0.566  | 0.138  | 0.165  | -0.092 |
| Subsidy for baby palms until they become matured            | 0.518     | 0.234  | 0.434  | 0.144  | 0.386  |
| lump sum premium for more tenure                            | 0.472     | 0.224  | -0.463 | 0.357  | -0.338 |
| 100% compensation                                           | 0.721     | 0.235  | 0.191  | 0.035  | -0.469 |

Extraction Method: Principal Component Analysis.

a. 5 components extracted.

In the first component, majority of loadings are covered by Scheme Particulars and hence the major suggestion are with regard to scheme particulars in this region. Then communication

particulars get in as the second component and the third component is comprised of the claiming particulars.

## **2.7. Case Studies**

### **2.7.1. Case Study – Maharashtra**

Vikram Salunkhe (pseudo name), Graduate, aged 52 is a coconut grower in Thane District in Maharashtra. His total area of cultivation is two hectares where he has got 120 tall variety palms insured. He also manages the farms of his parents. According to him, insurance scheme is necessary for this crop. However, the paper work for making a claim is cumbersome. Salunkhe also complained that when the claims were made in his father's farm, he received only around Rs.850/- per tree as compensation, which according to him is not sufficient. He also complained that he did not receive the promised amount of Rs.1100/- per palm (which means he is unaware of the clause that he will get only 80 percent of the claimed amount). A compensation of Rs.3000/- is just and reasonable according to him. Three months back, i.e. during September-October, he lost three of his palms due to storm and heavy rains, which he informed the office within seven days of loss. He told that the officials are yet to visit his farm and inspect the loss and no compensation has been received. He suggested that periodic visits should be conducted by the official concerned to inspect the farms. He also opined to increase the limit of seven days to one month or more. It is not only money the farmers invest in growing a palm and making it fruitful, added Salunkhe. They invest their time, effort and money. Once a new palm is planted, the farmer will have to wait for 4-10 years to get some yield. He suggested that just paying an amount which is around or less than Rs.1000 cannot end the hardship of farmers. Hence the Government or the authorities concerned may consider a subsidy scheme (a subsidy amount decided based on the yield together with required manure subsidy) should be given with 100 percent subsidy for first 2-3 years of growing a new palm, 75 percent for 3-5 years and 50 percent for 5-7 years. The subsidy should cease once the palm starts giving yield to farmers.

### **2.7.2. Case Study - Goa**

Madhav Borkar (pseudo name) aged 72, has got 600 palms in his three hectares area in Goa. As per Borkar, a loss of 2-3 palms a year is usual for him. He hailed the initiative taken by the authorities' viz. CDB to introduce such kind of schemes for the benefit of the coconut growers. It was heartening for him that he will get some compensation if he incurs loss to his palm due to lightning, rain, cyclone, etc. (which is a common thing and major reason for death of a tree) or pests at a nominal rate. He also said that the initiative taken by the Goa Bagayatdar Sahakari Kharedi Vikri Saunstha Ltd. and Zuari Industries Ltd., Goa, to pay a share of farmer's premium is indeed commendable. ***“I have to pay only around one rupee per tree to get it insured for which I am grateful to the Goa Bagayatdar and Zuari Industries”*** he added. He requested to further make these schemes available to farmers. However, he raised his concern about the scheme that in the current scenario, even if the compensation is claimed, he will not get the same for all the palms lost due to the franchise limit. Deduction will be there as per the clause in the insurance. Also, he will receive only 80 percent of the assessed loss for the accepted ones. He was also not satisfied with the time taken to settle even a genuine claim. Borkar opined that these kinds of stipulations should be removed and steps should be taken to compensate all the palms and pay full amount once the authorities find that the claim is genuine. He also stressed the need to give compensation in case a substantial reduction in yield is experienced. He reiterated the need to continue the scheme after making these structural changes.

### **2.7.3. Case Study – Karnataka**

There are situations where the insurance claim is rejected by the company on the basis of wrong declaration of facts. One such case is that of Vireswara Gowda (pseudo name) of Tumkur District in Karnataka. He has got more than 100 tall variety palms insured. Due to heavy wind, 4 of his palms collapsed. However, the claim was rejected on the ground that name of the insurer mentioned in the proposal/claim form was different from that mentioned in the field investigation report. Whether it was a case of misrepresentation of

facts by the farmer or happened due to an oversight from the side of farmer or the official is not known. Another case for rejection is non-fulfillment of franchise clause. The claim of Nanjappa (pseudo name) who had more than 200 tall varieties of palms was rejected as he only lost three trees and was not eligible for claim. However, in case forms and formalities are proper, there are situations where their claim is accepted and are paid amount as per stipulations (information received from the Department of Horticulture officials as well as from the satisfied farmers). Also, the farmers are interested to pay three year premium in advance. However, as in the case of other states, the farmers opined that the compensation paid is inadequate and the amount should be more.

#### **2.7.4. Case study – Kerala**

A classic example of delay in settlement is that of Joseph (pseudo name), aged 56 from Alappuzha district in Kerala. He has insured a total of 60 palms. Due to pest and disease and lightning, he lost 8 of them. He received the compensation (that too for 6 palms only) after waiting for nearly a year and due to this delay he was unable to replant the lost trees. Joseph also raised concerns regarding the compensation amount which was less than the promised rate. “While deciding about the compensation, due consideration should be given with regard to cost incurred in cutting the palm and cost of replanting until the palm becomes yielding”, he added. No clarification was provided by the authorities about the exclusion of palm or reduction in compensation amount (reduction of 20 percent of total compensation per palm as per terms and conditions of insurance about which he may be unaware of). He pointed out that along with the insurance, the authorities should also take necessary steps to conduct anti-pest measures at a subsidized rate so that pest/disease of palms can be averted. Major issue with regard to Joseph was the delay he experienced during the whole settlement process, which is a common thing with most of the growers surveyed in Kerala. Only speedy settlement can induce the growers to replant and thereby the sustainability of CPIS.

## 2.8. CPIS and State Insurance in Kerala - Comparison

Respondents and officials in Kerala region opined that there is an alternate insurance scheme in the state. Some were reluctant to join the CPIS or disliked the CPIS due to the prevalence of a scheme with better terms and conditions as well as satisfactory claim settlement time (as per the grower's perception). A comparison of the Coconut Palm Insurance Scheme with the Crop Insurance Scheme for coconut implemented by Kerala State is given in Table 2.14. One major difference is that similar to CPIS, there is no franchise limit in the state insurance scheme. In CPIS, the claim is assessed only if the number of palms damaged, due to perils insured are in a contiguous area is more than the palms lost as per different slabs. If there are 10-30 palms in an area one palm is considered as franchise palm and compensation is entertained only if palms lost are more than one. If insured palms are between 31-100, two palms are considered as franchise palms and for area with more than 100 palms three palms are considered as franchise palms and claim is assessed only if palms lost are more than three. However, under the state insurance scheme, there is no such franchise limit. Another difference is with regard to the amount of compensation paid. Under CPIS, the insurer i.e. farmer will be considered as his own insurer and only 80 percent of assessed loss will be paid to him (80 percent of the compensation offered of Rs.1100 or Rs.600 as the case may be based on the age of the palm). This limit is also not there in the state scheme where the farmer will get the full compensation. Premium discount is available under the state scheme if the farmer opts to pay three year premium in advance. However, under CPIS, only annual mode of payment is available. An issue with the state insurance scheme may be that no premium subsidy is provided under this scheme, whereas under CPIS, farmer has to pay only 25 percent of the total premium and the rest is shared by the CDB (50 percent), State Government (25 percent). However, if the state government refuses to pay the share of 25 percent, farmer has to bear that cost. Farmer's share is lessened in Goa as the cooperative society viz. Goa Bagayatdar Sahakari Kharedi Vikri Saunstha Ltd. and Zuari Industries Ltd., Goa, further lessens the burden of farmers from 25 percent. Under the CPIS, the farmer is eligible to make claim 30 days after taking the policy whereas under the state scheme, farmer becomes eligible for claim seven days after taking the insurance. Hence, the farmers who have taken CPIS cannot make claim if the loss of palms occurs within 30 days of inception of insurance. Reporting time under both insurance schemes is only seven days failing which the

claim will not be entertained. Both schemes are available only for nut bearing palms. However, the Kerala state government has got an alternate scheme to insure the non-nut bearing small palms below the age of seven years. The probable time of settlement of claims in case of CPIS is unknown, whereas claim is settled within 2-3 months on an average in the case of state scheme. Procedures for making claim are liberal and easy under the state scheme compared to the CPIS (as per a grower, it is very easy to join in CPIS, but laborious and tough to make claim).

If we compare CPIS with the state insurance scheme for coconut palms in Kerala, it can be inferred that major difference is with regard to the franchise limit and payment of only 80 percent of sum assured. Also, the government has a provision to compensate in a situation of crop loss or damage due to natural calamities.

Table 2.36 Comparison of CPIS with Kerala State Crop Insurance

| <b>Coconut Palm Insurance Scheme</b>                                                                     | <b>State Insurance Scheme</b>                                                                                                                                                     |
|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A minimum of 10 healthy nut bearing palms required                                                       | A minimum of 10 healthy nut bearing palms required                                                                                                                                |
| Deduction of palms based on franchise limit                                                              | No franchise limit                                                                                                                                                                |
| Insured grower is deemed to be his own insurer. Only 80% compensation is paid                            | Full amount is paid                                                                                                                                                               |
| Premium payable only in annual mode.                                                                     | Can pay 3 years premium in advance if ready (discount in case 3 year premium is paid in advance)                                                                                  |
| 75% premium paid by CDB; 25 by State govt. and only 25 % by the farmer*                                  | No subsidy. Full premium paid by the farmer.                                                                                                                                      |
| Loss should be reported within 7 days                                                                    | Loss should be reported within 7 days                                                                                                                                             |
| Eligible for claim after 30 days of taking the policy.                                                   | Eligible for claim after the 7 <sup>th</sup> day of taking the policy.                                                                                                            |
| Scheme applicable only to nut bearing palms.                                                             | Even though this scheme is applicable to nut bearing palms, there is an alternate scheme which provide insurance to the healthy palms between the age group of 1 month -7 years** |
| Probable time of settlement of claim is unknown and varies according to case.                            | Probable time of settlement is 2-3 months on an average.                                                                                                                          |
| Lot of procedures to make claim (such as sketch and plan of the farm, photograph of the lost palm, etc.) | Liberal procedures.                                                                                                                                                               |

Source: CDB (2011); Farm Information Bureau (2007)

\* In Goa farmer's burden is lessened by the cooperative viz. Goa Bagayatdar Sahakari Kharedi Vikri Sauntha Ltd. and Zuari Industries Ltd., Goa.

\*\* For palms up to 3 years, compensation is 100 rupees and for palms between 3-7 years amount paid is 200 rupees. Premium is 1 rupee per palm per annum and 2 rupees per palm for three years.

It can be inferred from the perception of the respondents as well as through the case studies and suggestions given by the local authorities of the respective regions that the overall opinion about this scheme is good. The majority of farmers are very much happy with the CPIS. The authorities should make a point that the scheme continues as it ensures protection of their palm, which is of utmost importance to the grower. However, as the scheme was introduced as a pilot one, some basic structural changes need to be made immediately so as to fine tune the scheme and to make it more effective, farmer friendly and beneficial to the growers. The different types of schemes available in Kerala should be integrated with the CPIS scheme so that the farmers could be ensured better compensation. But, in other states like Goa, Maharashtra, Karnataka and Tamil Nadu, as no alternate scheme is available other than the CPIS, this scheme may be continued with requisite modifications. Dissatisfaction among the farmers is to be mitigated by changing the clause that there should be a minimum of 10 healthy bearing palms for taking the insurance. By introducing farmer friendly clauses particularly considering the small farmers will be included so as to ensure more participation. Coconut usually takes long gestation period to get return once it is planted (usually four years for short and seven years to tall varieties). Hence a small compensation for the lost palm and for replanting is not a solution. It is necessary to compensate the farmer until the palm starts giving returns to the grower. Compensation per se could be either on the basis of loss of revenue to the grower due to the death of palm or on the basis of cost incurred in replanting until the new palm giving nuts.

Another issue with regard to the officials of Krishi Bhavan/Department of Horticulture is the lack of officials to manage the paper work regarding the scheme as well as lack of proper/attractive incentives to the field staff. According to them, the amount paid as commission is inadequate even to meet their travel expenses. Proper marketing is needed to attract the farmers to this scheme and make them aware of the benefits of insurance. To ensure this, the field staffs should be allotted a reasonable amount for the publicity and other activities relating to CPIS scheme.

The farmers need to be made aware of the terms and conditions such as franchise limit, exclusions, eligibility criteria, etc. through periodic awareness programmes so that the cases of rejection of claims may be reduced and confusion among the farmers with regard to this scheme

could be removed. As one of the major reasons for loss of a palm is pests, pest control should be done at a subsidized rate so that the loss of palm can be prevented.

#### Appendix 2.1 Area of cultivation

| Region               | Area (in percentage) |                    |                     |                      |               | Total |
|----------------------|----------------------|--------------------|---------------------|----------------------|---------------|-------|
|                      | Below 50 cents       | 50 cents to 1 acre | 1 acre to 2.5 acres | 2.5 acres to 5 acres | Above 5 acres |       |
| Goa-Maharashtra      | 9.3                  | 17.3               | 26.7                | 20                   | 26.7          | 100   |
| Karnataka-Tamil Nadu | 6.7                  | 8                  | 40                  | 33.3                 | 12            | 100   |
| Kerala               | 41.3                 | 29.6               | 19                  | 7.1                  | 2.9           | 100   |

Source: Survey data (2011-12)

#### Appendix 2.2 Palms per grower

| Region               | Number of palms (in percentage) |         |         |           | Total |
|----------------------|---------------------------------|---------|---------|-----------|-------|
|                      | Below 100                       | 100-250 | 250-500 | Above 500 |       |
| Goa-Maharashtra      | 44                              | 37.4    | 9.3     | 9.3       | 100   |
| Karnataka-Tamil Nadu | 29.3                            | 49.3    | 17.4    | 4         | 100   |
| Kerala               | 84.4                            | 13.5    | 2.1     | 0         | 100   |

Source: Survey data (2011-12)

#### Appendix 2.3 number of palms insured

| Region               | palms insured (in percentage) |         |         |           | Total |
|----------------------|-------------------------------|---------|---------|-----------|-------|
|                      | Below 100                     | 100-250 | 250-500 | Above 500 |       |
| Goa-Maharashtra      | 48                            | 34.7    | 8       | 9.3       | 100   |
| Karnataka-Tamil Nadu | 29.3                          | 49.3    | 20      | 1.4       | 100   |
| Kerala               | 88.6                          | 9.5     | 1.8     | 0         | 100   |

Source: Survey data (2011-12)

Appendix 2.4 Number of palms claimed

| Region               | palms claimed (in percentage) |      |      |          | Total |
|----------------------|-------------------------------|------|------|----------|-------|
|                      | No claim                      | 1-5  | 5-10 | above 10 |       |
| Goa-Maharashtra      | 74.7                          | 22.7 | 2.6  | 0        | 100   |
| Karnataka-Tamil Nadu | 28                            | 48   | 12   | 12       | 100   |
| Kerala               | 48.4                          | 37.8 | 8.5  | 5.3      | 100   |

Source: Survey data (2011-12)

Appendix 2.5 Subscription to CPIS

| Region               | subscription to CPIS (in percentage) |                     |       | Total |
|----------------------|--------------------------------------|---------------------|-------|-------|
|                      | Approached the office                | suggested by office | Other |       |
| Goa-Maharashtra      | 1.3                                  | 98.7                | 0     | 100   |
| Karnataka-Tamil Nadu | 17.95                                | 82.05               | 0     | 100   |
| Kerala               | 50.84                                | 48.32               | 0.84  | 100   |

Source: Survey data (2011-12)

Appendix 2.6 Waiting time for compensation

| Region               | Waiting time for compensation (in months) |      |      |      |       |          | Total |
|----------------------|-------------------------------------------|------|------|------|-------|----------|-------|
|                      | Not received                              | 1-3  | 4-6  | 7-9  | 10-12 | above 12 |       |
| Goa-Maharashtra      | 70.6                                      | 11.8 | 11.8 | 0    | 5.8   | 0        | 100   |
| Karnataka-Tamil Nadu | 46.3                                      | 20.4 | 24.1 | 9.2  | 0     | 0        | 100   |
| Kerala               | 8.6                                       | 19.4 | 21.1 | 28.6 | 19.4  | 2.9      | 100   |

Source: Survey data (2011-12)

## Chapter III

### CPIS: A SWOT Analysis

Several factors determine the sustainable functioning and effectiveness of CPIS. The positive and negative factors that have implications in the development of CPIS are analysed in SWOT. Any factor which works as an advantage to the CPIS is strength and disadvantageous is weakness. It is all the more important that the strengths, weaknesses, opportunities and threats of CPIS are identified and effective framework is developed in which the strength and opportunities could be maximized and threats and weaknesses could be minimised. The variables identified from the four areas are given in Table 3.1. Areas of strengths, weaknesses, opportunities and threats based on the perception of the growers as well as of the officials and field report submitted by the enumerators are used as the basic input for this analysis.

Table 3.1 SWOT Variables

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Strength</b></p> <ol style="list-style-type: none"> <li>1. Minimize risk of natural loss</li> <li>2. Encourages palm replanting</li> <li>3. Covers diseases</li> <li>4. 75% subsidy*</li> <li>5. Only scheme available for coconut palms**</li> <li>6. Scheme is available uniformly in all coconut growing areas</li> <li>7. Affordable premium</li> </ol>                                                                                                                                                                                                                              | <p><b>Opportunities</b></p> <ol style="list-style-type: none"> <li>1. Subsidy for new palms</li> <li>2. popularize the scheme</li> <li>3. Increase compensation amount</li> <li>4. Introduce 3 year or 5 year mode of premium payment.</li> <li>5. Premium rebate for those who choose to pay lumpsum premium.</li> <li>6. Avoid franchise limit</li> <li>7. Give 100 % compensation</li> <li>8. Fast settlement.</li> <li>9. Cover all palms.</li> <li>10. Club the state scheme with CPIs **</li> <li>11. Increase the reporting time.</li> <li>12. Reduce the waiting period</li> <li>13. 100 percent subsidy for small/marginal growers</li> <li>14. Insurance for climbers should also be provided either at free of cost or at the same premium.</li> </ol> |
| <p><b>Weakness</b></p> <ol style="list-style-type: none"> <li>1. Insufficient amount</li> <li>2. 100 % compensation not given</li> <li>3. Unhealthy and senile palms are excluded</li> <li>4. Delay in settlement</li> <li>5. Non-settlement of claims</li> <li>6. Franchise limit</li> <li>7. Lack of Communication</li> <li>8. Doesn't cover all palms</li> <li>9. Meaningless clauses</li> <li>10. Fixed sum insured irrespective of yield</li> <li>11. Less involvement of AIC</li> <li>12. Analysis of 1-2 years will not give actual results. Long term analysis of 10 years.</li> </ol> | <p><b>Threats</b></p> <ol style="list-style-type: none"> <li>1. Franchise limit</li> <li>2. Delay in Settlement</li> <li>3. Non-settlement of claims</li> <li>4. 100% compensation is not given</li> <li>5. Do not cover all palms</li> <li>6. Reporting time is less</li> <li>7. High waiting period</li> <li>8. Alternate schemes available**</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                        |

\* Burden further reduced in Goa

\*\* Alternate scheme is available only in Kerala

Premium subsidy, coverage against natural calamities/diseases and availability in all areas are the major strengths identified. It is commendable on the part of the authorities to share 75 percent of the premium burden. In Goa, premium burden is further shared by the co-operative and hence premium subsidy factor is higher in Goa than other states. Through CPIS, the growers are encouraged to replant the lost palm so as to enable them to minimize the financial loss incurred due to palm loss. This is also one of the major strengths of CPIS. Other than Kerala, the CPIS is the only scheme available exclusively for insuring coconut palms, which again could be termed as strength. However, this scheme has uniform terms and conditions in all the implemented areas discarding premium sharing which is different in Goa when compared to other regions.

Franchise clause and payment of 80 percent of premium may be termed as one of the weaknesses of CPIS across various regions and the same may act as a threatening factor to the very existence of the scheme. Another issue is with regard to the existence of meaningless clauses. The scheme does not cover loss/damage occurred due to nuclear reaction, aircrafts and other falling objects as well as damages due to any bird/animal. Occurrences of these factors are not under the control of the grower. Former happens in rarest of rare cases whereas the latter is more or less common.

Delay in settlement is a weakness, especially the survey results with regard to Kerala also show that time taken for settlement of claims is higher in Kerala region than the other two. Delay in settlement will also act as a threat to the scheme as it reduces the willingness on the part of the grower to take insurance. The delay may be due to the cumbersome procedures the growers need to follow while making claims. Non-settlement of claims which is also a weakness as well as threat to the respondents in Goa-Maharashtra and Karnataka-Tamil Nadu region, is not an issue with the respondents in Kerala as the proportion of those whose claims have not been settled is less in Kerala compared to other two regions.

Limited coverage is also one of the major weaknesses of the scheme in all the three regions. Another issue is with regard to the calculation of compensation amount which is not in line with the yield per palm. Loss of a palm brings in income loss to the grower and the same is not addressed in CPIS while paying the compensation which also acts as a weakness especially in Goa-Maharashtra region and more prominently in Maharashtra where the yield per palm is high due to better irrigation and fertility of land. Farmers need to report loss to the concerned officials

within seven days of damage which is difficult and impossible especially in regions such as Goa-Maharashtra and Karnataka-Tamil Nadu where transportation time is more and facilities are limited. Some of the farmers were denied claims only on the ground of not adhering to this clause.

Another weakness of the scheme is with regard to waiting period. If the loss/death of palm is within 30 days of taking insurance, the grower is not eligible for any claim. Claim will be entertained for loss incurred after 30 days of taking insurance which is a weakness as well as a threat. Availability of alternate scheme with attractive terms is a major threat for CPIS in Kerala. Kerala provides insurance scheme for agricultural crops which cover coconut palms as well. Growers will always prefer to schemes with better terms, claim settlement time, compensation, etc. In other regions, this is not a threat as CPIS is the only scheme available which insures coconut palm.

The involvement of AIC is very less in most of the regions. There should be proper co-ordination between the AIC, CDB and agriculture/horticulture office officials so as to ensure proper functioning of the scheme. CPIS has been implemented only for two years and the data and information are also not fully available for this period. It will not be able to depict the benefits/drawbacks of the scheme in such a short span of time, especially for a crop like coconut which is perennial in nature with long gestation period. It should be much more meaningful to conduct evaluation after implementing the scheme for a longer tenure i.e. 10 years. SWOT framework can be properly analysed if the particulars are analysed over a span of time, i.e. either a medium or long term.

There are opportunities which can be explored by fine tuning some of the indicators in the scheme. One such opportunity can be brought in if subsidy is provided for the replanted palm. This will help to withstand the weakness and assist the farmer in a better way to go for replanting. Popularizing the scheme by conducting awareness programmes through print/visual media may be another option. Some growers did not know the procedures to apply for claims, franchise clause, time limit, etc., even though these things are written clearly in the terms and conditions. Non-settlement of claims may be mainly because of lack of information to the growers regarding these clauses. Hence growers should be made aware of the terms and conditions as well as the claim procedures involved in so that rejection rate can be minimized.

Provision should be made for subsidy for new palms as well as to increase the compensation amount based on yield which, in turn, will ensure better replanting rate.

The same is acting as a major weakness and is threatening the very existence of CPIS and hence an upward revision of compensation amount based on yield is necessary. Another opportunity can be explored if the growers are provided with an option to pay premium for 3 or 5 years in lump sum. The suggestion was mainly given by the grower of Karnataka-Tamil Nadu region and respondents of other two regions have no such option in this regard. Premium rebate may also be given for those opting the above two modes of premium payment. This ensures the dual objective of long term insurance as well as reducing the workload of officials concerned with regard to the collection of premium. Avoiding franchise limit, coverage of all palms, speedy settlement and provision of 100 percent compensation are other major opportunities which could be explored with a view to making this scheme better and fruitful to the growers. Increasing the claim reporting time as well as reducing the waiting period of claim will undoubtedly open up new avenues to ensure better participation under the scheme.

As the marginal or small growers are badly impacted by loss of palm than the large growers, assistance in the form of premium subsidy is commendable. However, 100 percent premium subsidy, especially to small/marginal growers will ensure more involvement in the form of taking insurance as well as in coconut growing. It was inferred in the sample survey that in Kerala region, majority are marginal and small growers/farmers when compared to other two regions. Coconut is a crop which is not that much affected by price fluctuations (especially downwards) compared to other agricultural crops and the basic issue is reduction in yield or loss of palm. Insurance covers this loss and in the event of provision of 100 percent subsidy, more small growers will come forward for coconut growing as one of the major risks involved in growing coconut palm is averted to a certain extent.

There is an acute shortage of coconut tree climbers. Climbing is an activity which requires skill and involves risk of life. The scheme should be extended to insure the life of climbers as well at the same premium. Extending the scheme of insurance to the coconut climbers of the palm insured without any additional premium would entail a favourable situation for coconut cultivation with an increasing willingness for taking up palm insurance scheme.

## **Chapter IV**

### **Conclusions and Suggestions**

#### **Conclusion**

Crop insurance has emerged as an important agricultural policy measure since independence. CPIS was started with the objective of equipping and assisting coconut growers to minimize the loss in the event of natural calamities and diseases. Survey results point out that, in general, growers across the regions reckon that the scheme is necessary for a crop like coconut and to a certain extent; the scheme seems to have achieved its goal. Premium subsidy or premium sharing is an important feature of the scheme.

Kerala has mostly small/medium growers, both in respect of area of cultivated land and number of coconut palms, compared to the other regions surveyed. In all the regions, agriculture/horticulture offices are the agency which is directly dealing with the growers regarding CPIS. They have a crucial role to play in the success of the scheme and the growers opined that it was these offices that disseminated information about the scheme and functioned as a connecting link between CPIS and the farmers. The integral role played by the office in the success of the scheme is reaffirmed as most of the growers joined the scheme as per the suggestion/solicitation made by these offices.

According to the grower across the regions the scheme can be made more popular if the ineffective and out of context stipulations that make the scheme unattractive are addressed properly. There are also state level schemes that closely resemble the CPIS and hence CPIS could be made more meaningful by adding a bit of regional/state specific flavor to suit the specific regional situation. An issue which can be exemplified with particular reference to Kerala is the prevalence of a better alternate scheme and hence the state lags behind the other two regions in terms of coverage of all palms.

A probe into the functioning of CPIS shows that growers who have lost palms were the highest in Kerala region. Whereas generally pests/disease and rains are the major reasons responsible for palm losses across regions, in the case of Kerala in addition to these causes fire/lightning were also identified by the farmers to be causing loss of palms. Remittance of premium was not a problem for the respondents thanks to the premium subsidy provided by the CDB. Claims made

by the sample respondents are the highest in Karnataka-Tamil Nadu and the lowest in Goa-Maharashtra.

Prompt and fast settlement of claims will help the scheme to go a long way. In Kerala, rate of settlement as well as period of settlement is very high, whereas in other two regions in general and Goa-Maharashtra region in particular, cases of denial of compensation/non-settlement are high. Both late settlement and no-settlement of claims by the authorities scuttle the success as well as the very objective of the scheme.

Adequacy of compensation is very low in Goa-Maharashtra region mainly due to the high yield per palm, especially in Maharashtra. The respondents from these region also feel that the scheme has not helped to replant mainly because of high cost involved in felling the tree as well as the cost of replanting. A considerable number of (40 percent) growers in Kerala opined that the compensation paid is adequate because they are getting relief (compensation) from other sources as well. Though the scheme was introduced to promote replanting, some of the respondents in Karnataka-Tamil Nadu region are waiting for monsoons for replanting, due to the lack of irrigation facilities.

Generally, the respondents in all regions considered that insurance is necessary for coconut palms. In Kerala the state government provides assistance to the growers in the event of loss of palm, for which farmer does not have to pay any premium. Hence, those who consider the insurance as necessary are comparatively less in this region. Despite having effective alternatives, around 75 percent of the growers in Kerala consider the scheme as necessary.

Results of factor analysis on the grower's perception regarding the drawbacks and suggestion about the CPIS show similar inferences across regions. Issues relating to scheme particulars, communication and claim related factors are also listed as drawbacks. Grievances of the growers seem to be genuine and based on this they have made some suggestions. This would help to contemplate for reframing the scheme in such a way so as to ensure optimum level of benefit to the growers.

## **Suggestions**

In the state of Kerala, there is an alternate insurance scheme covering coconut palms in Kerala. Senseless/illogical stipulations were the reason for the aversion of the growers to CPIS by the respondents. Some of the drawbacks or weaknesses identified in CPIS were not prevalent in the state insurance scheme. However, irrespective of the fact that state scheme charges less premium, lack of subsidy in premium may make this scheme unattractive compared to CPIS. Issues such as franchise limit, 'own insurer' clause, etc. in CPIS are not there with the state scheme. Considering these aspects the CPIS has a bench mark as far as Kerala region is concerned and hence there is urgent need to further make the scheme farmer-friendly so as to ensure better coverage of palms.

Growers having less than 10 palms are ineligible to join the scheme. They are the most marginalized among the small/medium growers and pain of loss hurts these growers the most. The present scheme could be made open to all and this clause may be suitably amended. The suggestion is of paramount important especially with regard to Kerala as the proportion of marginal and small growers/farmers are higher in Kerala. Coconut is a crop which is not that much affected by price fluctuations (especially downwards) compared to other agricultural crops and the basic issue is reduction in yield or loss of palm. Insurance intends to cover this loss. Provision of 100 percent subsidy will encourage more small farmers to join the scheme as one of the major risks involved in growing coconut palm is averted to a certain extent.

Agriculture/horticulture office and more particularly field staff are the major connecting link between CPIS and the farmer and hence they have got a great role to play. More involvement from CDB and AIC will ensure better coordination. This will go a long way in spreading awareness among the growers about terms of the scheme, compensation amount, and claim procedure, etc. which, in turn, will help to reduce the claim rejection rate (as most of the claims are rejected due to non-fulfillment of terms and conditions) as well as claim approval time. Some terms such as claim reporting time needs to be amended as most of the growers strongly opined that it is virtually impossible for the farmer to report the office concerned within seven days of loss. Moreover the field staff may also find it difficult to reach the farm in such short time. There were instances where field staff had some issues with the compensation and travel allowances

given to them as they found these to be inadequate even to meet their expenses. Field staffs need to be motivated to work more by paying better compensation.

Income loss incurred to the farmer due to the loss of palm is not considered while calculating compensation amount. This needs to be redressed. Solution may be to calculate claim amount based on the average returns the grower used to get from the lost palm or provide subsidy to the new palm, or preferably both which will ensure a better replant rate.

CPIS is a pilot scheme introduced by the CDB and hence it will not be possible to find the effectiveness of the same after a short span of implementation. Long term implementation is necessary to conduct a fine tuned evaluation of the scheme. This may be considered as no major issues were identified with the scheme. An evaluation that can provide more insights into the scheme's effectiveness is possible only if there is consistent participation by the growers and there are no dropouts from the scheme after one or two years. To ensure consistent participation of growers in the insurance, provision should be provided for collecting lump sum premium for three or five years and incentives such as premium rebate, no claim bonus, etc. should be given to those opting for this mode of premium. This will also assist in reduction in workload of the agents. One issue with this may be that it may be demanding for poor or marginal farmers. Remedy to this is to follow the Goa model of premium sharing where cooperative society comes to the rescue of growers by sharing a part of grower's premium, thereby lessening the burden. Another solution may be to give 100 percent premium subsidy to small/marginal growers so that they will be induced to join the scheme for the long term.

Coconut tree climbing is a skilful and risky act and a shortage of coconut tree climbers is experienced across most of the regions. One of the growers from Goa pointed out that the situation of climbers is bad as there is no provision or insurance to provide compensation in the event of loss of life during climbing. It may be considered to insure the life of the climber without any premium burden to the climber or the coconut grower.

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