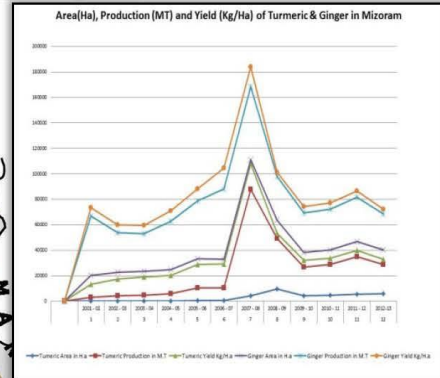


EXECUTIVE SUMMARY

Turmeric & Ginger Resource Mapping & Marketing Opportunity

| AREA, PRODUCTION AND YIELD OF GINGER IN MIZORAM | | | | | | | |
|---|-------|-----------|------------------|----------------|------------|------------------|-----------------|
| Sl. No. | Year | Turmeric | | | Ginger | | |
| | | Area (ha) | Production (M.T) | Yield (M.T/Ha) | Area (H.a) | Production (M.T) | Yield (M.T/H.a) |
| 2000 | | | | | | | |
| 1 | 01-02 | 280 | 2808 | 10 | 7287 | 46648 | 6.4 |
| 2 | 02-03 | 287 | 3845 | 13.4 | 5097 | 31136 | 6.1 |
| 3 | 03-04 | 320 | 4528 | 14.15 | 4481 | 29582 | 6.6 |
| 4 | 04-05 | 385 | 5509 | 14.31 | 4532 | 38068 | 8.39 |
| 5 | 05-06 | 522 | 9735 | 18.65 | 4654 | 45143 | 9.69 |
| 6 | 06-07 | 535 | 10074 | 18.83 | 3426 | 55432 | 16.17 |
| 7 | 07-08 | 4175 | 83500 | 20 | 3587 | 57010 | 15.89 |
| 8 | 08-09 | 9625 | 39662 | 4.14 | 10391 | 34290 | 3.3 |
| 9 | 09-10 | 4500 | 22500 | 5 | 6200 | 31000 | 5.0 |
| 10 | 10-11 | 4780 | 23970 | 5.01 | 6500 | 31950 | 4.92 |
| 11 | 11-12 | 5580 | 29240 | 5.24 | 7010 | 34460 | 4.92 |
| 12 | 12-13 | 6050 | 22990 | 3.8 | 7280 | 28390 | 3.9 |



MIZORAM

Legend

- Existing Turmeric
- ▲ Existing Ginger
- Potential Turmeric
- Potential Ginger

HEADQUARTERS:

- STATE..... ^
 - DISTRICT..... P
 - R.D.BLOCK..... !
- 10 0 10 20 30 40
- KILOMETRES

Turmeric Flash Card

- Strong growth in production & business is envisaged
- Mizoram contributes at par Turmeric production to NE
- Mizoram turmeric is well for its curcumin rich content

| Turmeric | Area (ha) | Production (mt) | Yield mt/ha |
|----------------------|-----------|-----------------|-------------|
| Mizoram | 6050 | 22990 | 3.80 |
| India | 1942 | 971090 | 5.00 |
| Highest ^N | 9625 | 83500 | 20.00 |

Highest National Productivity (Haryana) : 19.92 mt/ha

- Product Surplus
- Cultivation Cluster: Saiha, Champhai, Mait, Kolasib, Serchhip
- Potential: Reiek (Mamit), Tuipang (Saiha), Bikhawhr (Kolasib)
- Market: Aizol (local), Shilchar (National), boarder int. trade
- Value Addition: Processed, Confectionary, Health & Medical Inputs

Spice Export to total National export :: 1.24%

Spice Export to total Agriculture export :: 8.50%

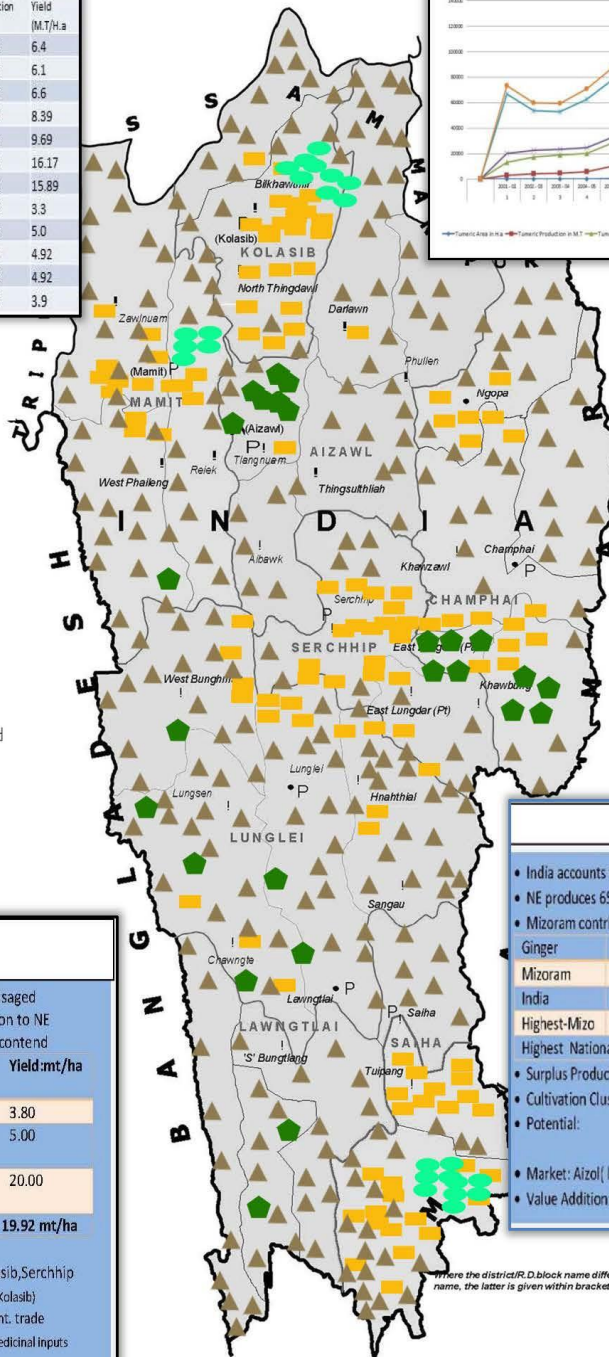
Ginger Flash Card

- India accounts for 45 % of the worlds' ginger production
- NE produces 65% of India's Ginger production
- Mizoram contributes 5% of ginger production

| Ginger | Area (ha) | Production(mt) | Yield:mt/ha |
|--------------|-----------|----------------|-------------|
| Mizoram | 7280 | 28390 | 3.90 |
| India | 136250 | 682630 | 5.01 |
| Highest-Mizo | 10391 | 57010 | 16.17 |

Highest National Productivity (Gujrat): 16.08 mt/ha

- Surplus Product
- Cultivation Cluster: Aizol, Champhai, Mait, Kolasib, Serchhip
- Potential: Talangnuam & Darlawn (Aizol), E.Lungdar (Serchhip), Khawbung (Champhai)
- Market: Aizol (local), Shilchar (National), boarder Int. trade
- Value Addition: Processed, Confectionary, Health & medicinal inputs



Where the district/R.D.block name differs from its headquarters name, the latter is given within brackets.

This report is designed for the highest attainable benefit to the target groups, i.e., to generate highest possible business realization from Ginger and Turmeric in Mizoram. To prepare the report, critical investigation, analytical methodology and deliverable approach have been taken into consideration.

Mizoram along with North East region enjoys product surplus in Ginger & Turmeric. India dominates export for both spices. On contrary, in seasonal variation, to meet its huge yearly demand, India has to import these (especially ginger) significantly in terms of combined value. Therefore, this study indicates how Mizoram can play the most competitive role in efficient production, inter-state trade, product diversification, import substitution & fueling export led growth of the country.

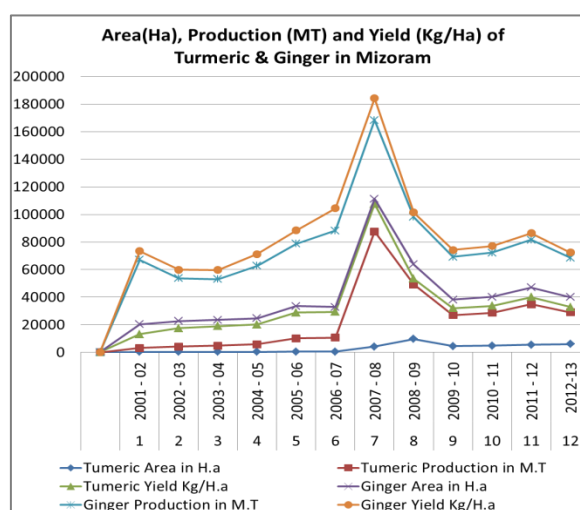
Both, Turmeric and Ginger are acceptable to the world, for their herbal, therapeutic and medicinal properties, since ancient times. Not only in horizontal space, but also in vertical sphere, the identified products have enormous capacity for generating growth and employment. Overall, Mizoram has its advantage over Geo-environmental like climate, soil and traditional mode of organic product capabilities. Turmeric with high Curcumin content and Ginger with long shelf life are specialty of Mizoram variety. We, at I-Win have systematically analysed the current scenario and future potential to prepare the study - *“Resource Mapping and Study on Potential of Ginger and Turmeric Cultivation in the State of Mizoram with reference to its Value Addition and Marketing”*.

Chapter-I defines the objectives of the DPR in line with ToR and the resource mapping of the study. Special emphasis is given on set out for economics of cultivation, post-harvest management, geo-environmental demographic location & climatic advantage and disadvantage of the state.

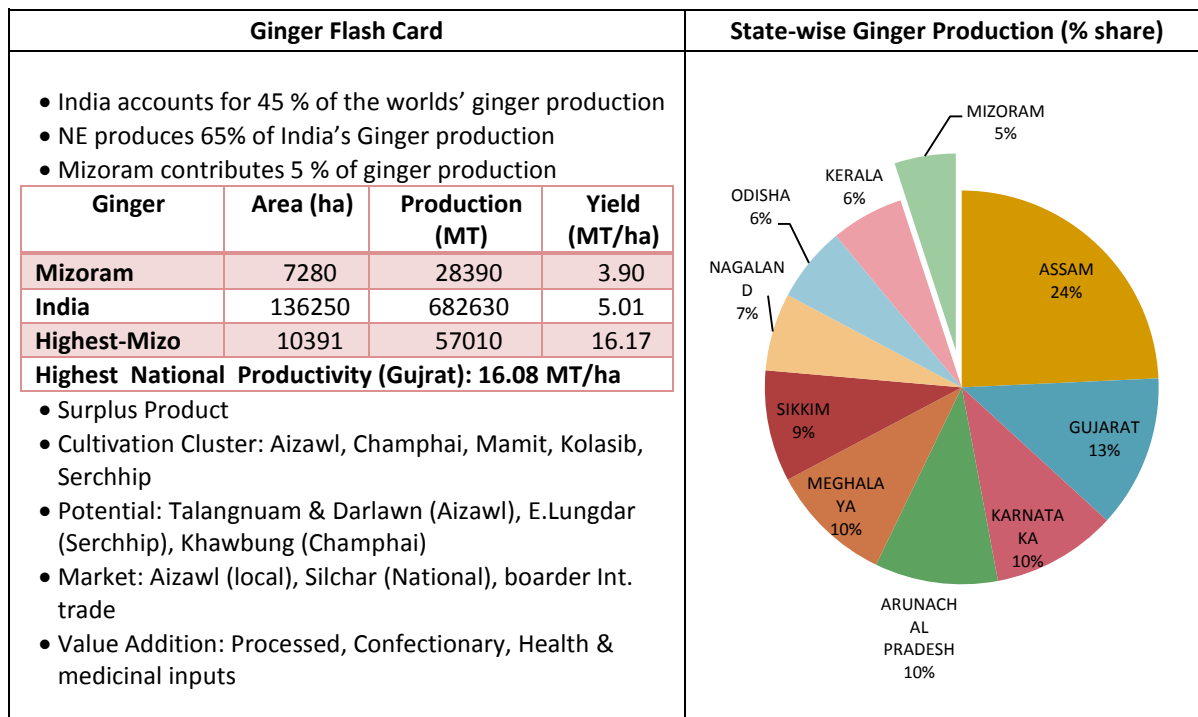
Chapter-II delineates how the study was carried forward. I-Win’s “Five Pronged Adaptive Developing Approach (FPADA)” is adopted to cover all the aspects of Ginger and Turmeric cultivation including marketing and value addition. The methodology follows well-defined orders such as Reconnaissance Survey, Extensive Secondary Research, Stakeholders Meet & Feedback, Questionnaire Based Survey and Focus Group Discussion distinct to reach the goal.

In chapter-III, existing scenario is compared with national, regional & other NE states for Ginger & Turmeric productions of the Mizoram are classified.

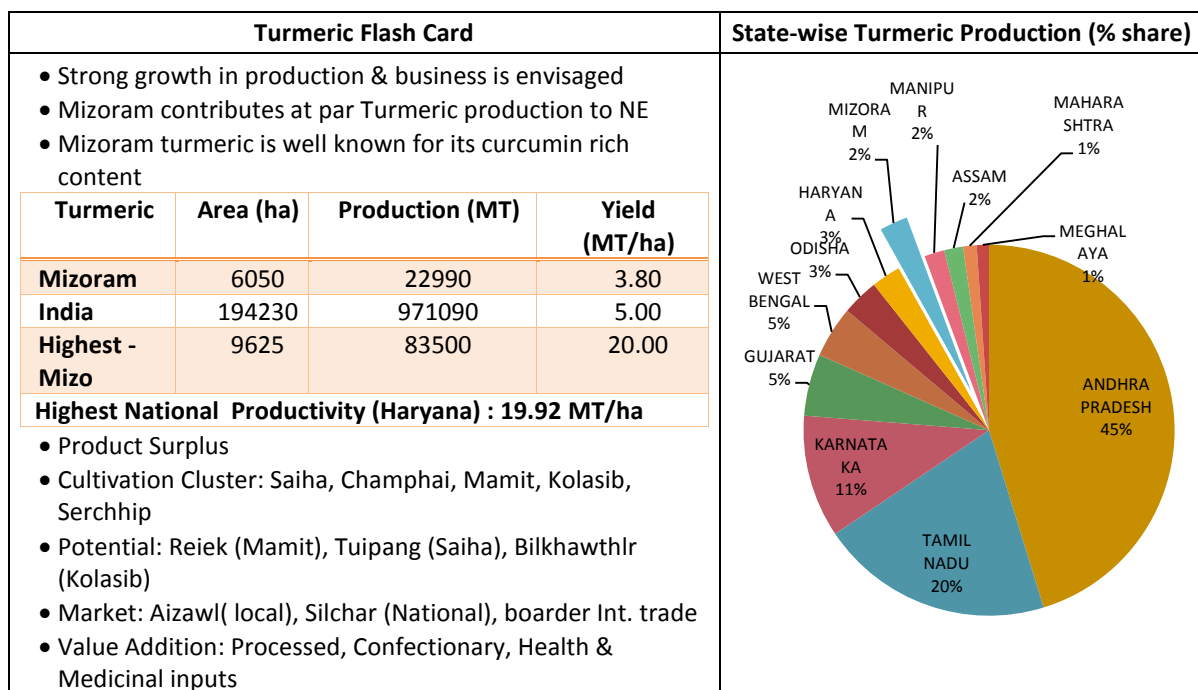
| AREA, PRODUCTION AND YIELD OF GINGER IN MIZORAM | | | | | | | |
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Turmeric and ginger production shows a sudden spike during 2007-09, it is a cyclical phenomenon occurring every 50 years in coincidence with bamboo flowering.



To enhance productivity of Ginger, Turmeric and to market value added product following plan can be undertaken.



Other indicative variables of pre-harvest, harvest & post-harvest process like input-output ratio, sowing season, practice, farm size and the Rank of the Ginger & Turmeric relating to other produces are explained accordingly.

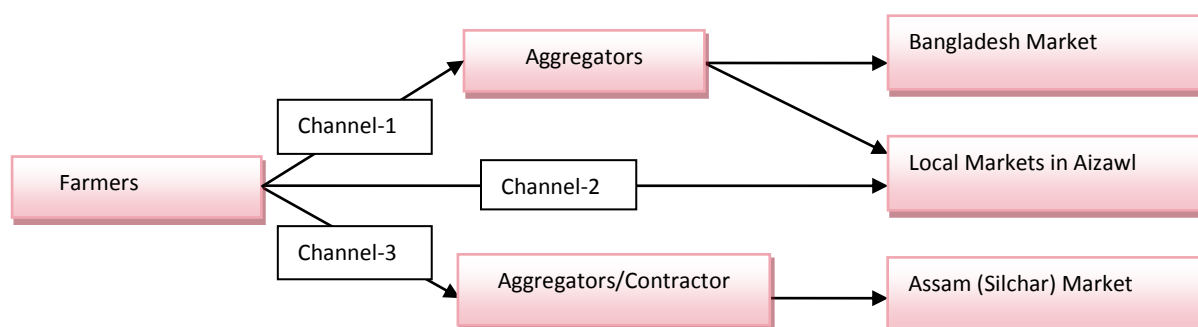
Demand and market assessment of the Ginger and Turmeric is explained in Chapter IV.

Demand of ginger & turmeric can be broadly classified into two categories: one from domestic demand & another from international demand. Main form of domestic demand of ginger is fresh ginger & main form of domestic demand of turmeric is turmeric powder. Major demand for high value processing products of ginger & turmeric comes from international market. In domestic market region wise demand for turmeric & ginger varies substantially.

The relative consumption, trade by value & quantity, export location and finally perspective of international trade for both the spices of Mizoram set forward.

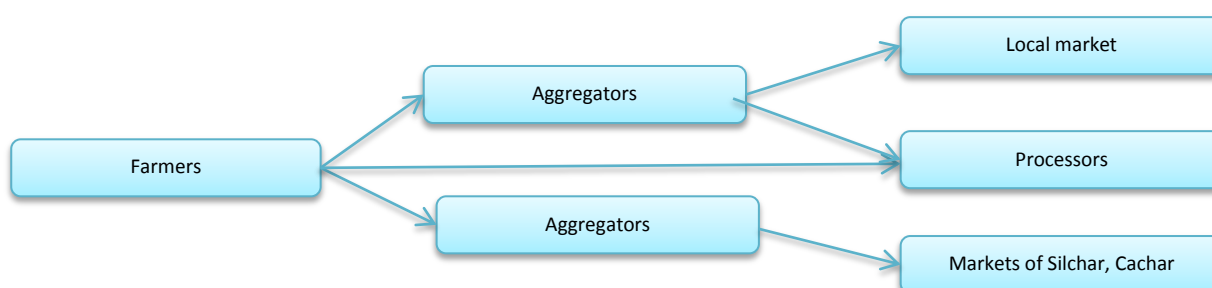
Cost of production and scope of marketing are discussed in Chapter-V. Farm size unit wise cost of production, marketing channels, price estimation, market scenario for fresh and processed products, consumption pattern, market players, market infrastructure and a case study of Mamit district explore the indicative production and marketing strategy.

Below diagram illustrates supply chain of ginger from growers to different markets. Domination chain in the entire supply chain is via aggregators' chain. Aggregators collect ginger from the farmers' gate & sale that in different markets.



Ginger of Mizoram is mainly marketed through 3 channels. One part of produced ginger comes to local market of Aizawl for the 'within the state consumption' purpose. Another part moves to other states mainly Assam & there from moves to different states of India & Bangladesh. The other channel, marketing directly to the local retailers is more remunerative compared to others. Entire trade path between Bangladesh & Assam occurs in an informal trade format.

Below diagram illustrates supply chain of turmeric from growers to different markets.



Turmeric farmers sale turmeric to aggregators & from aggregators it moves to local Aizawl market or processor. Some farmers are directly connected with the processor of turmeric and some farmers form a cooperative group & produce turmeric powder. For example in Mamit district, Raiek farmers form a cooperative & that farmer's cooperative produce turmeric powder. Another example of society based cooperative processing unit is Tlamsam village (Champhai district). All the members of this society are local farmers. In Aizawl district CSIR-

CMERE-CDAR plant produces both ginger & turmeric value added products. They procure fresh turmeric from the farmers. In case of ginger, aggregators of Mizoram are well connected with the traders of Silchar & Cachar.

Role of machinery is quite limited for turmeric and ginger cultivation as the farmers mainly use “Daw/Hoe” as farming accessories.

Chapter VI reveals the policy orientation, status of the processing unit, business model of the identified spices and depicts some case studies of prospective units.

Conclusion, recommendations and outline of the course of action plan are illustrated in chapter VII.

Four extensive challenges i.e., production, R & D, Business and Convergence programmes are identified. Existing resource mapping and better ways of intensive cultivation necessarily reveal better realization.

R & D for market, process and product innovations enhance long term sustainable and environment friendly growth that ensures maximum benefits to the all associates of the turmeric – ginger product-consumption welfare space. The most gainful business results from the usages and effective demand of the markets. Both turmeric and ginger by usages have spice, confectionary, therapeutic and medicinal values. Exploring all the opportunities, a comprehensive value yield organic production, post-harvest management, cooperative enterprise development, mobile governance, direct marketing like e-commerce B to B or B to C, contact forward marketing are advocated. Convergence of policy orientation linked to national flagship projects and state level missions effectively strengthen the goal of the turmeric –ginger cultivation and the best value realization.