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ANALYSIS ON

ONION VALUE CHAIN

IN BALOCHISTAN

GRASP • PAKISTAN

GROWTH FOR RURAL ADVANCEMENT AND SUSTAINABLE PROGRESS

Contents

Value Chain Analysis: constraints and opportunities

Many actors participate directly or indirectly in the onion value chain. The direct actors are those involved in the commercial activities (input suppliers, producers, traders, consumers) and indirect actors are those who provide financial or non-financial support services, such as credit agencies, business service providers and government, researchers, and extension agents. The overall performance of value chain is largely dependent on the behaviour of all the stakeholders.

The primary actors in onion value chain were seed and other input suppliers, farmers, traders, and consumers. title. Some functions or roles are performed by more than one actor, and some actors perform more than one role. The role of each of these actors is the following:

Input supplier

The input suppliers are responsible for agricultural inputs like improved seed varieties, fertilizers, herbicides, pesticides, and farm implements that are essential inputs at the production stage. Particularly more so in the onion value chain, as the quality and prices of these input supplies determine the overall profitability of the final product. For the onion production in Balochistan, farmers used chemical fertilizers with special preference to nitrogenous fertilizers, which induce vegetative growth. Farmers share knowledge amongst each other regarding the application of fertilizers, as they do not have the complete information about the actual crop requirements. As a result, they apply fertilizers indiscriminately, which increases the cost of production. Although, pesticides are available at each production centres, but their timely availability and quality is doubtful. Often the staff stationed at production centre may lack the requisite information on the usage and quality of pesticides. Sometimes, expired pesticides are also repacked and relabelled which are ineffective and pest resistant. Seeds are available throughout the value chain but are inferior in quality or adulterated which can lead to poor harvest. Local dealers/ shopkeepers frequently arrange for seeds, which may not be certified by the Federal Seed Certification department. Agriculture Research Institute, directorate of vegetable and seed production, Quetta is also producing some quality onion seed and making it available to the farmers on first come first serve basis.

Growers

Onion growers are the major actors who perform most of the value chain functions right from farm inputs preparation on their farms or procurement of the inputs from other sources to post harvest handling and marketing. The major value chain functions that onion growers perform include ploughing, planting, fertilization, irrigation, weeding, pest/disease controlling, harvesting and postharvest handling. While most of the onion growers usually do the farming of the crop themselves, many others subcontract their land to landowners. Like other agri-value chains, lack of awareness among the farmers is still a major issue, and they usually do not care about the quality, variety, and productivity. Moreover, the onion growers also lack access to finance and information, as a result they sell their produce to the commission agent, which in some cases also leads to exploitation by the middleman.

The diverse agro-climatic conditions can make growing onion crops highly cost-effective and competitive and provide vast opportunities in study areas. Unfortunately, these opportunities have not been exploited by the farmers due to the lower price they receive for their produce in the markets, as well as bearing the cost of post-harvest losses. Postharvest handling, which includes different activities like sorting, grading, packing, storing, transportation, loading and unloading, is done by the farmers themselves or traders). There are high postharvest losses due to improper harvesting, handling, packaging, and poor facilities to market. Means of transportation varies among producers to producers but predominately producers use pack animals and vehicles.

Pre-harvest Contractor

Concept of pre-harvest contracting is getting less common in case of onion because processors and exporters tend to buy from wholesale market rather than sourcing directly from the farm. This is due to uncertain environmental condition that influence the onion crop a lot. The PHC use their financial resources and local knowledge, and play an important role of buying and assembling, repacking, sorting, transporting and selling to wholesale markets retailers, as well as consumers. They also maintain close contacts with the commission agents and the farmers.

Commission Agents

Commission agents (*Arthi*) play a vital role in the value chain, and any improvement strategy depends on their support and involvement. The *Arthi* are considered an important part of the value chain as they perform many roles simultaneously, including providing finance to the producers/ PHCs with the condition to sell their produce

through them. There are two types of *arthis*, *kacha arthi* and *pukka arthi*. *Kacha arthis* are the commission agents who deal directly with farmers and sell their crops to *pukka arthis*. The *kacha arthis* usually deducts his commission from the sale price of the farmers' produce and charges it during the crop sale. Whilst *pukka arthis* are buyers of the crops and perform transactions directly with *kacha arthis* instead of farmers. *Kacha arthis* play a major role in the marketing of crops, not only due to their intermediary role between farmers and buyers, but also because they usually offer credit to farmers. The *kacha arthi* provide a critical service in amassing enough product from many farmers for marketing to larger traders/ *pukka arthis*, wholesalers and processors/retailers. They also play a role in quality control.

Wholesalers

The role of wholesalers in the value chain is important but not dominant since they just procure the produce in large volumes from the commission agent and after some value addition, sell it to the retailers with some margin. They purchase the produce in anticipation of the market demand, but this is not a large purchase since they do not have fruit storage capacity and there is also a problem of having access to working capital.

Processors

There are very few processors doing business in value addition of onions and those who are involved mostly purchase grade C or D variety for processing. A very small percentage of the total produce in processing. Their role in the value chain is currently limited and there exists a lot of scope for strengthening this by enabling an environment that diverts more produce towards value addition and processing.

Exporters

The exporter usually purchases from the wholesale market keeping in view the market requirement. Major export destinations for Pakistan's onions are the Middle East, Far East and Afghanistan. In the export market, Pakistani onions are considered to have low post-harvest qualities, as a result fetch low price.

Transporters

Domestic transporters play a vital role in getting crop from the farms to the destination market. Commission agents order and control transport, most of which is on high-sided body trucks with a loading capacity of around seven tones. Overloading is a feature of the system, supposedly to reduce transport costs per unit, and market levies which are on a per truck basis.

Access to inputs

Onions can grow in almost any soil; however, the most suited type is the sandy loam, well drained with a relatively good drainage, moisture-holding capacity.

Constraints at the inputs/entrants level	Root causes	Ease of resolution (Grade 1 to 5) – 5 is very difficult	Urgent action needed (Grade 1 to 5) – 5 is very urgent
Low use of fertilizer application	Soil in Balochistan are alkaline in nature are deficient in Nitrogen, Phosphorous and micro-nutrient requiring exogenous application of these elements No proper facility of soil and water testing Lack of knowledge of soil needs of fertilizer	3	3
Indiscriminate use of pesticides against pest attack due to adulterated and sub-standard pesticides available in the market	Promulgation of pesticide act is immediately required for implementation along with equipping the labs with manpower, chemical and glass wares Technical skills are required to implement this technique	4	4
Balochistan varieties like Chiltan 89, Sariab Surkh, Swat-1 and Thirch Mir have poor shelf life and are	The existing varieties require replacement with exotic colour full cultivars with better shelf life meant for export purposes. The hybrid	3	3

Constraints at the inputs/entrants level	Root causes	Ease of resolution (Grade 1 to 5) – 5 is very difficult	Urgent action needed (Grade 1 to 5) – 5 is very urgent
perishable in nature and needs to be disposed of once the crop is harvested	seeds are demonstrated with good agriculture practices to harvest a good crop. More cold storage facilities are required at production centres		

Opportunities/ recommendations at the inputs/ entrant's level	Possible implementing partners
• Launching campaigns to grow recommended cultivars under drip irrigation system to increase production and save precious water	Balochistan Agriculture Department/GRASP
• Promulgation of seed/ plant, pesticide and fertilizer Acts	Balochistan Agriculture Department/GRASP
• Training on soil sampling, testing and fertilizer needs	Agriculture Extension Department

Farming

- Onions are successfully grown throughout the province of Balochistan due to favourable climatic conditions, especially in regions of Kharan, Chagai, Nushki, Khuzdar, Kalat, Mastung, Awaran and Lasbela. The irrigation requirements for the crop are high as compared to other crops like cotton; but the farmers are convinced that the crop would generate better revenue if marketing opportunities were improved. Currently, the production yield is very low due to traditional cultivars coupled with old planting traditions and obsolete irrigation practices like flood irrigation system, efforts are made to introduce early cultivars with good shelf life, and improved irrigation techniques like drip irrigation system.
- Farmers generally have smallholding ranging from 2- 4 hectare with an exception of 6-8 hectares due to shortage of irrigation facility, and land fragmentation rules according to Islamic laws. Farmers are financially weak and arrange for inputs from the commission agents during crop production, they also sell their produce to the commission agent from whom loans were obtained. The commission agent levy's a 10 per cent charge on the services rendered, and plays a pivotal role in dealing with the growers in absence of active farmers association, and financing agencies. Financial lending agencies require collateral, and often the decisions take time to process; commission agents on the other hand, do not require any lengthy documentation and decision is made quickly on mutual terms.
- In the entire province, the production techniques are primitive including the type of cultivars, fertilizer application; irrigation methods because of which the average yields are lower compared to other countries like Iran or India. Immediate interventions are required to demonstrate new technology, cultivars, application of recommended dosage of fertilizer, high efficiency irrigation techniques along with fertigation. Farmers also need training in grading, packaging, labelling and further linking to other market players of the country and abroad.

There are two methods of planting onions - Direct Seeding and Transplanting. In practice, the first method of planting is more commonly used in the province. It requires 8-10 additional irrigation cycles for the germination of the seeds. In this method, plant-to-plant distance is difficult to maintain; consequently, the yields are low. Weeding by untrained women workers cause plants to damage. The latter technique has an edge over the former because of reduced seed cost, and increase in the number of nurseries which ensure plant-to-plant distance is well maintained, there is proper application of fertilizers, and better yields making the crop production uniform. This attracts the buyers in national markets as quality is assured.

Constraints at the farming level	Root causes	Ease of resolution (Grade 1 to 5) – 5 is very difficult	Urgent action needed (Grade 1 to 5) – 5 is very urgent
Old traditional irrigation practices causes over exploitation of meagre underground water resource Pests and diseases cause losses in the onion crop	- Obsolete flood irrigation practices with low yields - Thrips and collar rot cause heavy damage to the crop - Imbalanced use of fertilizer due to poor knowledge. Mostly nitrogenous fertilizers are applied which induce vegetative growth instead of contributing to the overall production - No guidance on effective and timely control of different insects, pests and pathogens - Low standard pesticides in the markets - Practices of disease identification are poorly followed due to lack of knowledge	3	5
Constraints to higher productivity of onion production. Considerable percentage of crop is lost due to poor crop management	- Lack of modernisation techniques and no demonstration of improved production technology - No access to recent findings of research on production and protection aspects of onion crop - No training of growers in crop production and protection	3	2

Opportunities/ recommendations at the farming level	Possible implementing partners
• Proper demonstration of irrigation efficiency and other water saving techniques like drip irrigation system can improve production, save water and check pest and disease incidences	Agriculture department, farmers and GRASP project
• Conduct regular monitoring of field to control infestation, pathogen and fusarium wilt	Agriculture department and farmers
• To keep the land fallow for one or two years in cases of fusarium will under Tube Well irrigation System which has limited command area.	Agriculture department and farmers
• Introduce a direct helpline for growers to get solutions to their problems	Directorate of Information and GRASP

Postharvest treatment (storage, packing), collection and transport

Constraints at the post-harvest, storage, packing and transportation level	Root causes	Ease of resolution (Grade 1 to 5) – very difficult	Urgent action needed (Grade 1 to 5) – very urgent
Onions are mostly harvested when temperatures are high	- Lack of infrastructure like shade houses at production centres - Weak post-harvest treatment, lack of cold storage facilities	2	4

Constraints at the post-harvest, storage, packing and transportation level	Root causes	Ease of resolution (Grade 1 to 5) – very difficult	Urgent action needed (Grade 1 to 5) – very urgent
Onions are harvested in foot hills an desert zones when temperature are in between 45-50 Celsius without having shed and cold storage facility and causes heavy damage to harvested crop	- Onions are harvested in the summer months when temperatures are high without proper sheds at farm level and cold storage facility. - Farmers are compelled to harvest and make dispatches to national markets irrespective of market trends and don't have any value addition facility at farm level.	3	3
Non-existent collection centres and no proper transportation facility	- Due to non–availability of collection centres, farmers make dispatches either right from the field to Quetta main market or transport to other national markets through open trucks. - The truck owners put in one lorry as many as 800 gunny bags. As a result the onions lying at bottom or in between are completely crushed or bruised by the time it reaches the main markets of Karachi or Lahore.	3	3
Onions are completely crushed during transportation and poses risks on food safety and reduces quality	- Lack of proper storage areas in case of delays in dispatching. - Insufficient value addition and processing at farm level which results in heavy losses.	3	4
Onions are not sorted and graded before marketing	- No sorting takes place to discard crushed, infected, damaged, and bruised onions - Onions are not sorted by size (small, medium, jumbo) either. These limits fetching higher prices in market for bigger sized onions		
High temperatures during transportation affect the moisture and quality of the onions. Wastage during loading and unloading of products	- Transport from production centres to Karachi or Lahore take several hours, e.g., from Kharan (Balochistan) to Lahore, the trip may take 18 hours. - High temperatures during transportation due to lack of refrigerated compartments - Wastage due to traditional practices of farming and lack of modernisation		

Opportunities and recommendations at the Postharvest treatment (storage, packing), collection and transport	Possible implementing partners
• Construct shade houses at production centres	Demonstration by GRASP Project
• Establishment of cold stores at district level	Private sector
• Introduction of refrigerated transportation for fruits and vegetables in the provinces	Private sector

• Encourage entrepreneurship, especially women, for processing and packing of onion at farm level including solar dryers	GRASP interventions
• In case of glut in the market using small trucks for transportation to avoid crushing and bruising is encouraged	
• Value addition and processing is encouraged at farm level to avoid heavy losses of the crop.	

Processors

No processors are available in the entire province rather onions are transported to main national markets and then processors buy from those main markets according to their needs and requirements. Dittu, Quetta based factory, only dealing with fruit by products like Jams, Jellies and Marmalades. The special Economic Zone at Bostan under CPEC is coming up in future may address Balochistan based product like fruits and vegetables including onions

Onion processing:

- Onions can be processed in canned, caramelized, pickle and chopped form
- Sliced, ring, minced, granulated and powder form
- Onion powder can be used in snacks, sauces, salads, soups, gravies, appetizers, seafood, meats and medicinal purposes
- Restaurants, fast foods also use onion by products in ready to eat food products, burgers, pasta, frozen food, and instant mixers.
- Onion powder can be used in restaurants, canteens, and domestic consumption
- Women can heavily be involved in onion value addition and processing

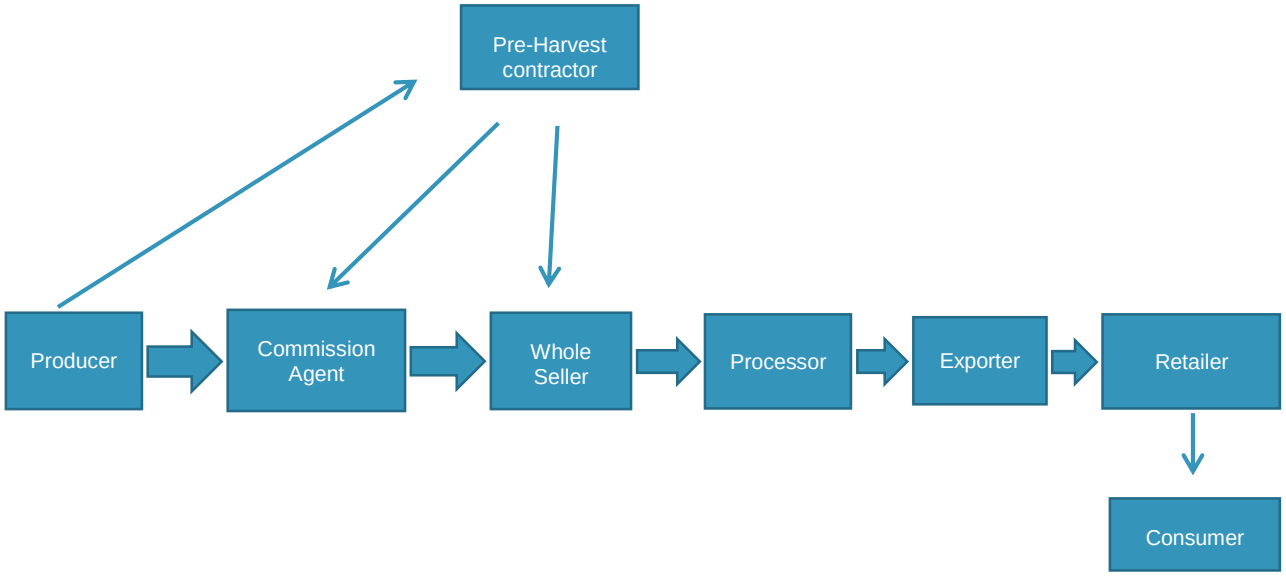
Constraints at the processing level	Root causes	Ease of resolution (Grade 1 to 5) – very difficult	Urgent action needed (Grade 1 to 5) – very urgent
Post-harvest manual practices reduce quality of products and cause contamination	- Weak manual techniques cause rupture skin, reshaping, mashing and rotting of onions. In addition, onions are exposed to contamination with dust which generates issues for washing and cleaning of onion to processing factories - Insufficient number of dehydrators units to handle onions during harvest	3	4

Opportunities and recommendations at the processing level	Possible implementing partners
• Favourable environment for vertical improvement in production and processing	Agriculture department and GRASP Project
• Use of onion at each household level with great demand of processed onion in national and international markets	SMEDA and GRASP Project
• Bright future of women entrepreneurship	GRASP Project

Distribution channels and competition

- **Competition**
  - Prevalence of traditional marketing structures, which causes deterioration of fresh produce.
  - Most Onion growers sell their produce to commission agents. The latter provide them with loans and charge them commission when produce is auctioned
  - Growers occasionally sell their produce to pre-harvest contractors when there is high demand in national markets and opportunities of export
  - Commission agents often offer inputs and loan conditionally to bring the produce so that loans are deducted and also charge commission for the services being rendered at the market

Marketing Channel at Quetta and Other National Markets



Domestic market

There is only one Fruit and Vegetable established Market located at HazarGangi Quetta having all facilities meant for marketing purposes like Platforms for auction, presence of other market players for a fair competition, presence of commission agents, storage and transportation facility. Most of other districts are lacking with such a facility but directorate of agriculture Economics and Marketing making efforts to have such a facility at least at district level. Once these markets are completed and made fully functional then small farmers may take a cool breath for disposal of small produce at local level instead of taking to Quetta based main market

- **Local markets / local shops / bazaars:** describe the main challenges faced in the local market specific to the product

  There are no proper functional district markets in the entire value chain rather efforts are being made to have such facility and one market at khuzdar has recently been established with the result the farmers of the surrounding area disposed of their produce locally which is further transported by commission agents to districts like Panjgoor Turbat and even to Karachi. The local shops have to make contact with the commission agents based in Quetta and place their demand on daily basis and dispatches are made through small trucks. The local shops and bazars facing great difficulties in having small requirements locally but they are dependent on th e only market at Quetta.

- **Food services, restaurants and institutional consumers:** describe where they get their supply from

  Since farmers have no proper association to take care of their interest and have their presence in the market for disposal of their produce without the interference of commission agents. In the past some

efforts were made by the department by providing them a place for dumping and disposal of the produce of farmers association for direct marketing but it did not work. The requirements of restaurants and institutional consumers are small in nature and their requirement varies on daily basis that's why they buy from the local market according to their need. Efforts could be made in future to introduce such an activity to link the farmers for supplying directly to food services, restaurants and institutional consumers without the involvement of commission agents/ bulk retailers.

- **Retailers :** identify major retailers in South Pakistan and complete the table below (provided by Gallup)

Constraints	Root causes	Ease of resolution (Grade 1 to 5) – very difficult	Urgent action needed (Grade 1 to 5) – very urgent
Local markets / local shops / bazaars			
• Other domestic markets are not fully established • Demand of hotels and restaurants are very limited • self-marketing by farmers	• Farmers prefer to take their produce to national markets for competitive bids • Local hotel and restaurants have very little demand which can be met from local shop keepers/groceries • Poor education of farmers • Growers often use local names for most of their cultivars and are unaware of commercial names • Locked in business relationships with commission agents from who they obtain advanced loans.	2	2
Food services, restaurants and institutional consumers			
In Balochistan it is in its infancy stage and has to grow	Such business is yet to be introduced	1	1
No proper place for grocery bazars for retailers within the town and even no Friday or Sunday Bazars like other provinces	Wandering from one place to another. They are pushed by the law enforcing agencies while roaming in the streets	2	2

Support services: public agencies, quality management, training institutions and private support services network

Public institutions and technical agencies

- **Quality management support services**

The agriculture department is responsible for maintaining the quality through its research and extension wing and provide services at all levels. In Agriculture research wing there are more than 35 directorates and mostly located at Quetta with few satellites at major ecological zone of the province. The entire research wing has been independent on the small grants of Pakistan Agriculture Research Council or foreign funding in the shape of developmental projects rather entire resources are consumed on pay and salaried and very little is left for field operations

- **Extension services providers**

The agriculture extension wing has its network throughout the province even at village level in the shape of un-trained Field Assistants known as front force of the department and most of them are either untrained or found

away from the place of their duty due to political involvement. The staff is in-effective that' why farmers for their survival running from pillar to post in acquiring of new information or technology or such information is moving from one farmer to another in one way or the other. The seed, fertilizer and pesticide companies make advertisement through radio and TV network and have their agent for the promotion of their product instead of providing services to farmers at their doorsteps. The department is legging being in having, seed and plant, pesticide and fertilizer act for the ensuring the quality products after the 18th amendment.

Assess the quality and effectiveness of the extension services providers

	Institutions	Main constraints
Public support services network	Provincial Agricultural Extension Department Directorate of Plant Protection (Agriculture Training Institute at Sariab Road Quetta & Jacobabad)	Functioning of the department needs to be improved, particularly related to increasing the number of women extension workers to improve their outreach . The Department is responsible for standardization of doses of pesticides, registration of distributors and dealers, and quality control through its inspectors and pesticide laboratories. Enforcement of regulations is weak
	Balochistan Food Authority	to ensure food safety regulations are followed by all concerns across Balochistan Poorly equipped, lack of resources and shortage of manpower Limited reach to districts. Currently, main operations are limited to Quetta city, and will expand gradually to other parts of the province
	Agriculture Research institutes Quetta Lasbella University of Agriculture, Water and Marin Sciences Balochistan Agriculture College Quetta Balochistan University of Information Biotechnology.	Poor linkages with the private sector. Research is not geared towards finding solutions with respect to water management and evolving varieties which have short duration Weak funding opportunities
	Directorate General of On Farm Water Management Engineering and Water Management	Dealing only with civil work activities like lining of Water Courses and Water Storage Tanks
	Agriculture Marketing(AMIS)	The act needs to be revised to provide a space to private sector a there should be provision for establishing companies
	SMEDA	SMEDA may create an environment for the development of Small and Medium enterprise development

	Institutions	*Opportunities and recommendations*
Public support services network	Provincial Agricultural Extension Department	May strengthen institution like Agriculture Training Institute, Balochistan In-service Academy and Agriculture Research Institute Quetta for training of Untrained Field Assistant, prove a space for women Field Assistant and evolve varieties well suited to a particular zone
	Food Safety Authority	The Balochistan Food Authority has since been promulgated but its rules and regulations are yet to be drafted and approved by the competent authority
	Directorate of Food Technology	Directorate may develop new traits and develop with the farmers for carrying processing at farm level
	Directorate of Women Division Quetta	Can arrange training for women at village level for the processing of fruits and vegetable including Onion. The office requires to be strengthened with field wares and improving their mobility

Training institutions

The Agriculture training Institute Quetta's main objective was to train a sizeable numbers of participants for competing with others for the post of Field Assistants who are known as front force of the department rather now carrying training for the in-service Field Assistants of both Agriculture extension and Agriculture research wing of the department for the sake of promoting to next rank prior to their retirement instead taking viable messages to the growers and solving their problems at field level. The same is true in case of Balochistan Agriculture College which is now being upgraded to the rank of Balochistan Agriculture University for the up lands of Balochistan. Most of the participants prefer to get education from the Universities located at Faisal Abad, Peshawar Agriculture University and other facilities available in other provinces. Such Institutions needs to be strengthened as far as staff and other labs ware are concerned.

Training Institutions	Level, duration, topics and staff/ Number of trainees	Description	Main constraints
University			
Balochistan Agriculture Training Institute, Quetta	Three years Diploma course. At present there are 350 trainees	Soil Science, Entomology, Pathology, Horticulture and other related subjects	Staff training and lab equipment. List has been obtained
Balochistan Agriculture College Quetta	Department of Horticulture, Agronomy, Plant Breeding and Genetics, Entomology, Soil Science, Food Technology, Agriculture Extension and Agriculture Economic Bachelor, master and doctoral degrees	597 male and 35 female students	The requirement has been obtained
Technical and vocational training institutions			
Technical Training Center & Food Certification Center at Bostan Special Economic Zone	To be established		No competency standards exist for Onions. They exist for citrus/ cotton/ chilli production and processing
Entrepreneurship programmes and incubators			
Balochistan University of Information Technology and Management Sciences Quetta	Entrepreneurship Development Program		The University has all facilities

Training Institutions		
	Training Institutions	***Recommendations and opportunities***
	Agriculture Training Institute Sariab	May arrange Training for Female Field Assistant to Provide a space for women Field Assistants for delivering information to village level GRASP project may support the institution for the up gradation
	Technical and vocational training institutions	
	Technical Training Centres available throughout the province	The quality does not meet the private sector requirement. Certificates issued need improvement to bring them at par with institutions of Punjab
	Entrepreneurship programmes and incubators	
		Special entrepreneurship programs are to be lunched focusing women groups. GRASP can play a pivotal role in this particular sector

Business support services network

Business support services network	*Institutions*	*Category*	*Main weaknesses*
	Balochistan Horticulture Cooperative Society	Producer association	Lack of office and trained manpower to develop strategies/programs concerning farmers issues related to Water Use Efficiency
	Bostan Special Economic Zone (to include Onion processing facility)	Producers related issues	To be established under CPEC
	Balochistan Chamber of Commerce and Industry	Producer association	Should focus on processing and value addition of Balochistan based products
	Department of Commerce and Industries	Processors	While creating special Economic zone in the province, focus should be on Balochistan base agriculture products including other products
	Local banks/Government	Banking and access to finance	Lack of appropriate government-based credit schemes Local banks demand land as guarantee for loans

Support services analysis

Business support services network	*Institutions*	*Recommendation and opportunities*
	Turbat Date Development Centre	Establishment of a tissue culture lab may bring revolution in quality date production with varietal shift
	Bostan Special Economic Zone to include the processing of agriculture products, including dates	Under CPEC hopefully Balochistan based products will gets proper attention as far as processing and value addition is concerned
	Balochistan Chamber of Commerce and Industry	May establish processing units of fruits and vegetable keeping in view the arrivals from various districts
	Banks and financial Institutions	To encourage loaning for inputs and establishing small and medium enterprises, government may pick the interest to pave the road for having value added and processing facilities in the province

Business environment: constraints and opportunities

Business environment constraints are those that influence transaction costs, such as regulatory environment, administrative procedures and documentation, infrastructure bottlenecks, certification costs and costs of support services.

- **Regulatory environment**

The Balochistan Market Act 1991 (revised 2004) further requires to be re-drafted to make it in line with the present needs and requirements, especially to cover items lacking in the original act. The Balochistan Seed and Plant Act, Fertilizer Act and Pesticides Acts are yet to be drafted and promulgated to enable the staff working in the field to act as per law to curb the malpractices in the shape of adulterated pesticides, seeds and fertilizer being marketed in entire value chain.

The Balochistan Food Authority Act was passed in 2010 and was approved by the competent authority to implement it in the entire province to ensure quality and safety of food to the citizens of the province. However, its rules and regulations are yet to be framed.

- **Administrative procedures and document**

For the recommended Acts, the services of a qualified consultant is required to have the input of the department, assess the needs and requirements, before processing the case for getting the approval of the provincial cabinet

and further placing the document before the Provincial Assembly for debate and approval. Once the bill is passed the rules and regulations are framed and get approved for implementation.

- **Infrastructure bottlenecks**

Infrastructure for all concerned departments is available but needs to be strengthened and made functional. The staff appointed for the purpose needs training in their respective fields at national institutions.

- **Certification requirement and cost**

There is no designated body in the entire province to implement the food safety standards required within the country and for exports. Balochistan Food Authority or the Directorate of Food Technology is responsible for such standards and could be strengthened. They could also be given the task to train and educate the farmers about the national and international standards and certification requirements.

- **Cost of support service**

The cost can only be determined once a task is given to any institution for providing services for a particular job. At this stage, it is very difficult to ascertain the cost.

Constraints in the business environment at the product level	Root causes	Ease of resolution (Grade 1 to 5) – 5 very difficult	Urgent action needed (Grade 1 to 5) – 5 very urgent
No specific quality parameters are followed by producers	No quality standards for commercial variety of fruit and vegetable products	3	3
Administrative approvals are lengthy and time consuming	Lengthy procedures and bottlenecks at each levels, which can take up to months or years to get approval	3	4
Difficult to have power and gas connections while establishing enterprises	An environment has been created to delay the approval which increases the investment cost	3	3
Certification requirement and cost for the date sector as an organic crop is difficult	No such facilities exist in the entire province rather such institutions are located in Sindh and Punjab province and hesitate to travel to production centres for verification3	3	4

Opportunities and recommendation at the product level	Direct beneficiary	Possible implementing partners
Acute shortage of irrigation water for crop production. Need to implement water management projects like drip irrigation system	Farmers	Agriculture department and GRASP project
Establish value addition and processing by providing small scale units for onion flake and powder making	Producers and women entrepreneurship	Project interventions
Developing marketing channels with market intelligence	Farmers and traders	Visits and B-B linkages development
Leverage on the export opportunities to neighbouring countries	Producers and traders	Taking part in expo-centres to showcase Pakistani products

Environmental issues and opportunities

Environmental issues	Root causes
Weak water management efficiency	Flood irrigation is used in Balochistan which holds low running costs and easy application, but is less efficient and does not work for sandy soils
Prolonged droughts and low precipitation badly affect onion production	Global warming and change in rain patterns
More irrigation is required to harvest the crops and more solar tube wells for pumping additional underground water	Rise in temperature and non-implementation of Water policy
Absence of agriculture policy in the province	The department has no agriculture policy to share with the farmers. In addition it also needs to focus on areas like water mining, and subsidy for shifting towards high efficiency irrigation system

Opportunities and recommendation on environmental issues	Direct beneficiary	Possible implementing partners
Need for drought-resistant cultivars with better shelf life to store at field conditions Establish early cultivar plantations	Producers	Agriculture research Institutes
Establishment of cold stores at district level and creating shed facility at field level	Producers and private sector investors	Private Sector and GRASP project
Need for value addition and processing of the crops at farm level	Producers	GRASP Project

Gender inclusiveness constraints and opportunities

Gender inclusiveness constraints	Root causes
• Large number of women are engaged in onion transplanting, weeding and harvesting, and they work and produce on land mostly owned by men. • Women are also involved in processing of onions to make pickles and gravies but they cannot market these products on their own. • They could further be engaged in modern line processing and entrepreneurship opportunities to enhance competencies in these areas	Some factors that limit women empowerment include lack of access to credit, gender bias in transfer of new technologies and required training, and lack of access to education. Women face issues of mobility and market access. Moreover, the role of intermediaries and commission agents reduce their income further.
Harvesting is done mostly by older women, who participate on the farms alongside men. Younger women are discouraged from working in the fields	Cultural and religious constraints

Opportunities and recommendation on gender	Direct beneficiary	Possible implementing partners
Value addition and processing • Designing of new trades and programmes specific to onion processing, packing and further linking to national markets • Launch training programs in value added items like friend onion and onion pickle making them specific to involve more women. • Creation of product differentiation in products through packaging and branding • Link women groups creating value added product to existing markets and e-commerce	Women in processing	WBT Advisory Council
Yield enhancement and reduction of prevalent diseases • Increased access to certified seed for sowing • Increased yields through training in production practices (integrated weed management, irrigation, pesticide use) and post harvest practices (sorting and grading)- Women as change makers in the value chain • Creation of extension programs for women (taking into account cultural and time constraints)		
Entrepreneurship and Women Enterprise • Incubation centres for women entrepreneurs and formation of women groups/ cooperatives • Strengthening women enterprises and groups through training on farmer economics, enterprise development, and branding		

SWOT analysis

	Strengths	Weaknesses
At Farmer level	• 58 per cent provincial share in Pakistan's total production • Important source of livelihood in the entire province, particularly where fruits are not grown on commercial scale	• High dependence on irrigation in desert zone, under flood irrigation system. • Production level is low, hence the production cost is high (absence of economies of scale); low competitive position as compared with other countries • Low yielding onion varieties with poor shelf life • Price fluctuations: under or over supply of onions result in huge price fluctuations and opportunistic behaviour of farmers
Agribusiness services (input, collection and processors)	• Despite the fact that pesticides and fertilizers are available in production centers, their quality is questionable, and often not monitored	• Lack of processing and prevalence of outdated traditional methods • Insufficient cold storage, shade houses and processing facilities
Support services	• FAO has emphasized on the production and marketing of onion product and linked farmers to national market players through its Balochistan Border Districts project	• Poor linkages between research and private sector • Weak outreach of Government (extension and other departments) institutions
Regulatory	• Balochistan Provincial Assembly approved the Balochistan Food Authority act in 2010. The rules and regulations of the act are yet to be drafted	• The Balochistan Pesticide, Fertilizer Seed and Plants acts are yet to be promulgated; Balochistan Market act needs revision • No specific quality standards in place and used by producers • Poorly equipped food safety regulatory institutions • Poor outreach of Balochistan Food Authority
Gender	• Significant women participation in the value chain; many activities conducted by women; such as transplanting, weeding and harvesting	• Non-recognition of important role of women throughout the value chain • Limited space for female entrepreneurship • Limited training opportunities for women
Environment	• Balochistan holds large biodiversity strength in terms of growing onion in all climatic conditions	• Poor water management efficiency resulting in high water losses
	Opportunities	**Threats**
At Farmer level	• Significant domestic and abroad demand	• After harvesting needs immediate disposal due to poor shelf life. Private sector indicates research is not geared towards finding solutions
Agribusiness services (input, collection and processors)	• High potential for value addition, including dried, paste, powder, flakes and sauces • Market opportunities for fresh onions	• Low standard pesticides enter the market

Support services	• New Special Economic Zone in at Bostan near Quetta to offer processing facilities	• Requires heavy irrigation to harvest a crop. Good Agricultural Practices (GAPs) required • Competition with cotton crop
Regulatory	• Training and awareness on new regulations under the Balochistan Food Authority can help strengthen the sector	• Weak coherence between federal and provincial regulations
Gender	• If linked to market opportunities, women can be pivotal for the value addition and processing at farm level	• Not enough female extension workers • Cultural constraints
Environment	• Environmentally friendly technology (e.g. solar dryers) can help cut-down post-harvest losses	• Persistent droughts and poor precipitation heavily affects production

Product market combination

Market segment	Key constraints	Key success criteria	Suggested actions at the production level	Suggested actions at the market level	Targeted market channel
Extended (6 months or longer) supply of fresh onions	- Lack of cold storage and packaging facilities. - Production planning is absent.	- Sufficient Volumes of high and consistent quality	- Improve collaboration between farmers - Farmers Business Schools	- Develop cold chain logistics, emphasis on forced air and cold storage - Aggregation and storage facilities at district level to prolong the shelf life of onion - Joint marketing	National retailers
Fresh onions with value addition (e.g. branding)	- Insufficient facilities for value addition - Onions are sold fresh irrespective of market trend and cannot be retained due to poor shelf life	- Value added (packaging, food safety certification, branding)	- Improve techniques to ensure food quality - Improve preservation techniques and storage	- Support to develop farmer-processors-market linkages - Market information and develop marketing strategies	National retailers and export markets
Locally certified seed production	- Poor quality and low yielding varieties	- Local seed production of (OP) improved and recommended varieties, supervised and supported by Government Department	- Nursery establishment; demonstrations and variety comparisons in farmer fields - Capacity Building for specialized seed and seedling producers (new business development)	- Identification of agents for sales of improved seed - Support marketing and sales of locally produced seeds	(Organized) farmers

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