

Marketing and Profitability of Crops in Pyawt Ywar Pump Irrigation Project

Policy note
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D Kumara Charyulu¹, Myat Thu, Min Oo and Anthony Whitbread

Pyawt Ywar Pump Irrigation Project (PYPIP) is one of more than 300 pump irrigation projects (PIP) constructed by Government of Myanmar over the last 20 years as part of its strategy to increase agricultural production, particularly of rice. The scheme draws water from the Mu River through one primary and two secondary pump stations, irrigating a range of crops including paddy (monsoon and summer), green gram, chickpea, sesame, groundnut, wheat, maize and cotton. The scheme was constructed in 2004 with a nominal command area of 5000 acres, (1300 ac paddy + 3700 ac other crops), but actual area irrigated has consistently been much lower (1538 ac in 2013-14; and 950 ac in 2014-15). Poor performance of PIPs is reported to be the result of a range of technical, operational and agronomic issues, from an inefficient layout to inappropriate crop choices. The Livelihoods and Food Security Trust (LIFT) supported Irrigation and Water Utilization Management Department (IWUMD) to rehabilitate and upgrade the PYPIP scheme to bring it into full operation and improve productivity of the scheme.

The present study² was undertaken in five villages benefitting from the scheme as a part of the LIFT funded Pyawt Ywar Pump Irrigation Rehabilitation Project. Identification of improved market opportunities can only be underpinned through assessment of existing farming systems, extent of marketable surplus, access to different markets, mapping of different market channels, costs incurred in marketing, existing and future potential value-addition opportunities and other socio-economic constraints etc. Very little information was available on current market linkages, the extent of farmers' access to different markets and the level of price realization for major agricultural commodities in the project area. An elementary market study was undertaken to bridge this gap, document the existing market demand and identify potential value addition opportunities for different commodities. The study also

specifically focused to cover a wide range of value chain actors (farmers, traders/processors and exporters etc.) for major agricultural commodities grown in the central dry zone (paddy, green gram, chickpea and sesame) and newly introduced vegetables in the irrigation scheme (green chilies, eggplant and bitter gourd). The specific objectives of the study were to: a) understand the level of market access, current output utilization pattern and extent of marketable surplus etc. b) map commodity-wise major marketing channels and estimation of price spread c) identify major issues in marketing and price realization at different actors and d) assess the commodity-wise potential for value addition opportunities.

The present study adopted Focus-Group Discussions (FGDs) with farmers as a method of data collection specifically focused on market related research issues in all five project villages. Personal interviews were exclusively conducted in case of processors, traders/middle men and exporter etc. to deeply understand the commodity movement at different layers. For better understanding about different market functionaries and nature of trading among different crops, personal visits were also made to Monwya and Mandalay Trader's Associations. The major market channels for dry grains as well as perishables were mapped and market margins were estimated respectively. The study also made an attempt to calculate the extent of price spread for determining the marketing efficiency among different channels.

Nature of marketing system

In general, the agricultural marketing systems in Myanmar seems to be at the beginning stage, even though the development stage may be different by crops and by regions. For example, trading pattern for dried products such as grain including rice, pulses, oilseeds products, and others is based on the samples in the crop exchange centers in major cities (see Figure 1). Moreover, even forward contracts are made for some crops in some of the crop exchange centers. The transactions seem to be fair and transparent because prices are determined by many buyers and sellers in open places within the centers. In

¹ Corresponding author (d.kumaracharyulu@cgiar.org) is a senior scientist (Agricultural Economics) at Research Program-Innovation Systems for the Drylands (ISD), ICRISAT, Patancheru, Hyderabad, India

² Access full report @ <http://oar.icrisat.org/11051/>

this sense, the marketing for dried products is relatively developed, and operational and pricing efficiencies are relatively high. However, marketing facilities for fresh produce such as fruits and vegetables are not modernized and limited in space (see Figure 2). These markets are merely a gathering place for a number of (big) retailers and consigners. Instead of open auction, transactions are made direct contacts and on consignment basis. It is safe to assume that the agricultural marketing system is at the beginning stage due to lower marketing efficiencies arising from lack of storage, grading standards, transportation and proper roads.



Fig 1: Trading centre at Monywa Township.



Fig 2: Vegetables trading at Mandalay wholesale vegetable market.

Marketable surplus in project villages

Except paddy, crops are highly dependent on market for their disposal (Table 1). The extent of domestic consumption of pulses and oils seeds is minimal. They are highly dependent on pulse export market hence the high price volatility in their output price realization. Even in the case of paddy, nearly 55% of total produce is sold in the open market. However, the government announces the minimum floor price only for paddy to protect the interests of its growers. Majority of commodity trading

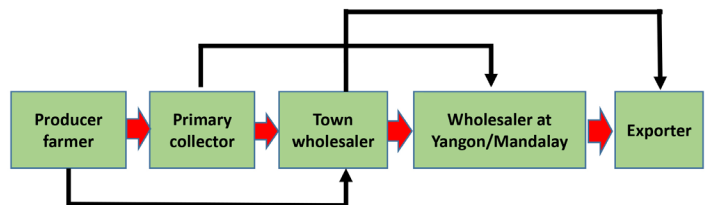
takes place in raw form and hence there is ample scope for commodity processing, grading and value-addition opportunities for better price realization and improved incomes.

Table 1: Crop wise pattern of output utilization and the extent of marketable surplus in PYPIP villages.

Commodity	% total output used for			
	Consumption	Seed purpose	Sell in market	Others if any
Paddy	40-50%	5%	55%	0%
Green gram	6%	4%	90%	0%
Chickpea	4%	6%	90%	0%
Sesame	5%	5%	90%	0%
Green chilli	1%	0%	99%	0%
Bitter gourd	1%	0%	99%	0%
Eggplant	1%	0%	99%	0%

Major market channels

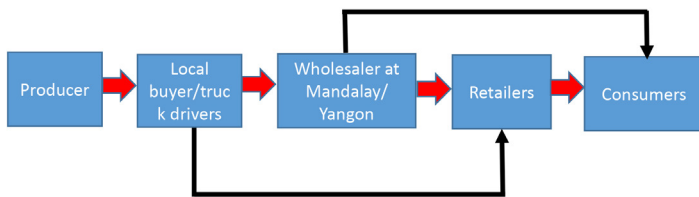
A marketing channel is the people, organizations, and activities necessary to transfer the ownership of goods from the point of production to the point of consumption. The major channel identified for marketing of dry grain is Channel-3 depicted below.



In the absence of public marketing system in the country, the farmer producers are highly dependent on village traders to dispose-off their high marketable surplus. In general, traders visit the villages and procure directly from farmers in case of paddy. The situation is different for pulses and oilseeds as farmers' carry their produce to nearby townships and market them at prevailing prices. Due to lack of both on-farm and public storage facilities, farmers are often exposed to forced sale.

The market channel for fresh fruits and vegetables is more simplistic as less intermediaries are involved in the commodity movement. Furthermore, at the moment, the role of processing and value addition is almost negligible in the country. Given the low demand for perishables in project villages, farmers' need to market them in distant markets such as wholesale fruit and vegetable market at

Mandalay. Local buyers/truck drivers play a crucial role in marketing between primary producers with distant wholesale markets. The prevalent marketing channel observed in case of perishables is as follows:



Estimation of price spread and marketing margins

The producer’s share (%) in consumer price was estimated to determine the level of marketing efficiency among different crops. The analysis revealed that it was only 38% in case of paddy indicating significant margins gained by traders/processors. Relatively, the market channels in case of green gram, chickpea and sesame are more efficient (producer’s share in unit export price of these grains were around 80%). However, in the project area these channels are rather weak for fruits and vegetables (producer’s share in consumer price was only 60% in case of chilies, eggplant and bitter gourd). This clearly reveals strengthening of efficient markets for perishables is the need of the hour.

Average productivity levels

Productivity is one of the key determinant factor for assessing economic viability of crops. The extent of crop diversity among project villages is limited due to water scarcity and limited exposure to new crops. Historically, the project farmers’ have been cultivating paddy and pulses crops because of lack of alternate market opportunities. The inherent production risks as well as high price volatility in these crops are the major challenges limiting the livelihood development in the region. Fig 3 summarize the mean productivity levels of different crops elicited in the village FGDs. Relatively, the mean productivity levels are slightly higher in the project area when compared with CDZ region (Mather David et al. 2018). The mean productivity levels in case of vegetables is relatively lower when compared with neighboring townships. As the farmer’s are gaining experiences in its cultivation, it is expected that the productivity will increase in the future.

Profitability of crops

The profitability of crops directly influence the livelihoods and living standards of farmers in the region. In general, the viability of irrigated and rainfed agriculture in Myanmar is as similar as other regions of the world. Among all crops, the benefit-cost ratio is significantly

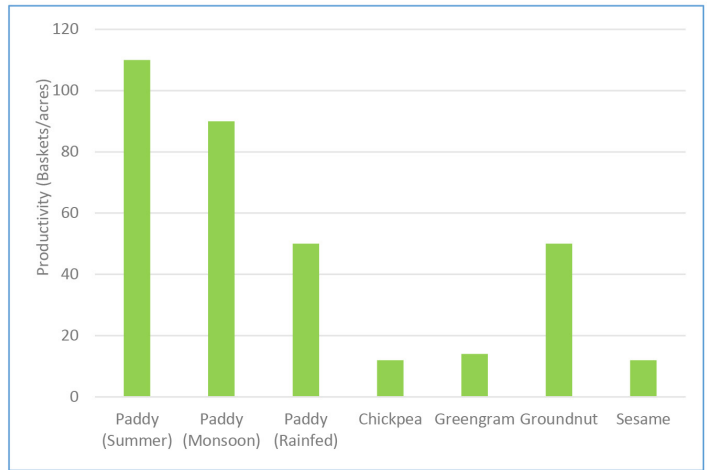


Fig 3 Mean productivity levels in PYPIP area

Potential value addition opportunities

The avenues for increased market access as well as value addition in the PYPIP villages are:	
Crops	Avenues
Paddy	<ul style="list-style-type: none"> - Ample scope for establishment of farmer collectives and enhancing their bargaining power - Huge potential for paddy processing, value-addition and marketing - Efficient use of byproducts for livestock/piggery/poultry rearing
Pulses/oilseeds	<ul style="list-style-type: none"> - Broadening the export base by adopting export standards and quality care - Creating public or cooperative storage facilities for avoiding distress sale - Financing farmers based on warehouse receipts or pledge loans - Strengthening market research and price advocacy and dissemination - Enhancing policies for promoting value addition opportunities
Vegetables/fruits	<ul style="list-style-type: none"> - Linking farmers to markets through innovative market channels - Strengthening farmer collectives for better bargaining power - Promotion of value addition opportunities in fruits and vegetables

higher for the newly introduced vegetable crops (chilies and eggplant) followed by paddy (rainfed), paddy (irrigated during monsoon), groundnut, paddy (irrigated during summer), greengram, bitter gourd, sesame and

Table 2 Economics of crops cultivation in PYPIP area during 2018 (100,000 MMK/acre)

Item	Paddy (S)	Paddy (M)	Paddy (RF)	Chickpea	Green -gram	Groundnut	Sesame	Chili	Eggplant	Bitter Gourd
Total costs	4.43	4.35	1.51	1.88	2.22	2.90	1.05	13.14	11.36	12.40
Total returns	8.20	9.20	4.00	2.20	3.64	5.75	1.60	70.00	40.00	20.00
Net returns	3.77	4.85	2.49	0.32	1.42	2.85	0.56	56.86	28.64	7.60
B:C ratio	1.85	2.11	2.65	1.17	1.64	1.98	1.53	5.33	3.52	1.61

Paddy (S): Paddy (irrigated during summer); Paddy (M): Paddy (irrigated during monsoon); Paddy (RF): Paddy (rainfed)

chickpea crops (Table 2). Chickpea did not perform well because of recurrent wilt occurrence and poor price realization during harvesting period (2017-2018). The cultivation of newly introduced vegetable crops are quite promising than the traditional crops. Further, the expansion of vegetables not only enhances the project water-use-efficiency in the command area but also improves the incomes and livelihoods of farmers.

Conclusions

Trader's role is inevitable to market any agricultural commodity in the country. In general, the production risks are high in case of dryland crops (pulses and oilseeds) when compared with low land crops (paddy). The extent of marketable surplus among study crops in the project area is very high (>80%) and farmers' are highly dependent on markets for their disposal. The absence of public and private storage facilities further complicated the situation and often farmers' exposed to forced sale due to financial obligations. The farmers' awareness about prevailing market prices is very poor and they are in turn highly dependent on traders/wholesalers for price information. The market prices of different commodities are determined based on Yangon/Mandalay wholesale market prices. Relatively, the markets are more efficient in case of dry grains when compared with perishables. The newly introduced crops such as chili, eggplant and bitter gourd are rated as highly profitable crops than the traditional crops. However, assured and efficient market linkages are critical for further expansion of cropped area in the project.

The policy recommendations for the Central Dry Zone emanated from this study are:

1. Strengthening of farmer collectives and development of innovative market linkages especially for perishables crops is needed when improving agricultural productivity in irrigation schemes throughout the CDZ
2. Establishment of public and private storage facilities to prevent the distress sale of farmers and allow them to obtain remunerative prices
3. Promotion of market intelligence and effective price dissemination strategy to safeguard the farmers from high price volatility
4. Ample scope for introduction of processing, grading and value-addition facilities in paddy, pulses, oilseeds and fruits/vegetables
5. Enhancing formal credit access to farmers through pledge loans or warehouse receipts.

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- Kumara Charyulu D, Myat Thu and Win Oo 2018. Market Survey Findings in Pyawt Ywar Pump Irrigation Project, Final Report, December 2018.
- Mather David, Nilar Aung, Ame Cho, Zaw Min Naing, Duncan Boughton, Ben Belton, Kyan Htoo, and Ellen Payongayong 2018 Crop production and Profitability in Myanmar's Dry Zone. Research Paper 102, Food Security Policy Project (FSPP), Feed the Future Innovation Lab for Food Security Policy, USAID.