



Research Article

Growth, Export Performance and Trade Competitiveness of Lentil (*Lens culinaris*) From Nepal

Binod Ghimire^{1*}, Shiva Chandra Dhakal¹, Santosh Marahatta¹, Ram Chandra Bastakoti²

¹Faculty of Agriculture, Agriculture and Forestry University (AFU), Chitwan, Nepal

²Green Resilient and Productive Agriculture Ecosystem (GRAPE/GIZ), Lalitpur, Nepal

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*Corresponding author

Binod Ghimire,

Faculty of Agriculture, Agriculture and Forestry University (AFU), Chitwan, Nepal.

Email: binodghim@gmail.com

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Abstract

The lentil (*Lens culinaris*) sector in Nepal has realized as an export potential commodity but lacks adequate trade related research and development. To study the growth, export performance and trade competitiveness of Nepalese lentil, secondary data pertaining for the period of 30 years (1990–2019 A.D.) were analyzed classifying as pre and post WTO period for Nepal. Compound annual growth rate (CAGR), Cuddy-Delle Velle instability index, export performance ratio, revealed comparative advantage (RCA), trade specialization and Herfindahl-Hirschman index were analyzed. The trend analysis showed highly fluctuation with the growth rate of 40.31 and 42.24 percent per annum has been noticed in import value and quantity respectively. Whereas; the export quantity is found negative growth of 0.43 percent and export value with the growth of 1.44 percent. High instability was found in all parameters of export and import and highest variation was noticed for pre-WTO period in comparison to post-WTO. Nepal enjoys relatively strong competitiveness in export of lentil with RCA value greater than 1. Trade specialization index fluctuated over the years, it remains in the stage of import substitution declining from growth stage and have witnessed positive direction to revive the lentil export performance from Nepal. Herfindahl-Hirschman index showed that the Nepalese lentil market for export is highly concentrated which can lead to high economic risks.

Introduction

Agriculture sector of Nepal continues to hold the important place in national economy where 65 percent people are involved directly and contributes about 27.7% to the total Gross Domestic Product (AITC, 2020). Agriculture Development Strategy (ADS) emphasized making the agriculture sector of Nepal competitive through commercialization, mechanization, and diversification

which are major dominated by export of lentils, tea, cardamom, fruit, ginger, and medicinal and aromatic plant products (ADS, 2015). The prioritized value chains in ADS include: dairy, lentil, maize, tea, and vegetables. The Nepal Trade Integration Strategy (NTIS) has also prioritized lentil as one of the 19 commodities with export potential in Nepal. Lentil is an important agriculture commodity of Nepal in terms of both area and production with export potential

(NTIS, 2016) and important component of cropping system (Ghimire et al., 2023). Nepal produces small-sized red lentil very much appreciated for its taste in South Asia, Middle East, and other countries with migrants from South Asia and Middle East countries which is a major exportable agricultural product has been the regular source of foreign exchange earnings for Nepal (Acharya et al., 2019).

Lentil (*Lens culinaris*) is one of the most important exportable legumes from Nepal. Lentils dried, shelled were the world's 1408th (out of 4648) most traded product, with a total trade of \$1.8B. Between 2018 and 2019 and the exports of it grew by 6.04%, from \$1.7B to \$1.8B and represent 0.0099% of total world trade (OEC, 2019). Nepal accounts for 4.35 per cent of global lentil area (208766 ha), 4.38 percent of global lentil production (251185 tons) and is the fifth largest producer after Canada, India, Australia and Turkey (FAOSTAT, 2019). Percentage share of Lentil in the total export of Nepal is 1.3% and Bangladesh, Singapore, Sri Lanka, Germany, Korea, UK, Indonesia are its major export destinations. Bangladesh was the major buyer importing 86 percent of lentils from Nepal (MoALD, 2017).

In spite of agriculture playing a strong role in livelihoods and the economy, Nepal's agricultural trade is in deficit. In 2018/19, agriculture imports represented 601% of agricultural exports; with the agricultural trade deficit at NRs. 164 billion (MoALD, 2019). Nepal is still the net importer of agricultural products, despite being an agricultural economy (Magar, 2019). Foreign trade is considered as an essential factor for accelerating the path of economic development (Sharma & Bhandari, 2005). Nepal is one of the most liberalized and trade-dependent economies in South Asia (Acharya, 2019). Nepal's foreign trade is rapidly increasing but with the increase in the total volume of trade, the trade deficit is also increasing (Kafle, 2017). Nepal with its integrated into the global market through WTO could benefit substantially from international trade in exportable agricultural commodities like lentil. In order to take advantage of these opportunities, it is essential to analyze trend and growth, export performance and export competitiveness of Nepalese lentil which can provide in-depth insights for policy guidance and suggest possible export promotions strategies and support programs for future interventions. Taking in consideration to lentil, systematic efforts have not been made to collect figures regarding area and production of pulse crops, nor have conducted effective study to analyze the growth pattern of pulses including technological and socio-economic aspects of the cultivation of pulses in Nepal (Rimal & Gurung, 2016).

Being highly potential exportable commodities of Nepal, lentil constituting more than 3 percent of the world export of lentil is not getting enough attention in digging out trade

performance for creating favorable exports. With the study of export performance and competitiveness, it is very essential and urgent to know overall lentil trade structure to formulate commodity export strategies in future. In this context, the present study made an attempt to measure the trade related performance and competitiveness of Nepalese lentil to the world's total lentil export with interpretations and suggestions for policy and programs formulation.

Materials and Methods

The study was mainly based on secondary data collected from FAOSTAT, TRADEMAP, OEC, Ministry of Agriculture and Livestock Development, review of other pertinent literatures and various internet sources. Data on export and import both on quantity and value of lentil from Nepal pertaining for the period of 30 years (1990 to 2019 A.D.) was used for the analysis. Using MS-excel simple statistical tools have been used to analyze data. The procedural and statistical methodologies employed in time series data were described in the following subsection.

Compound Annual Growth Rate (CAGR) Analysis

For analytical purpose, the entire 30 years period was divided subjectively in to two sub-periods i.e., pre-WTO and post-WTO phase, with the implicit assumption that each sub-period would have distinct nature and pattern of development due to WTO. To analyze the CAGR, following Potnuru et al. (2018) the exponential form of regression analysis was employed to analyze export and import situation.

$$Y_t = ab^t e^u$$

Where;

Y_t = dependent variable (export/import)

a = intercept term, $b = (1+r)$ and " r " is the compound growth rate

t = time period, e^u = error term

The above model in the Logarithmic form was expressed as,

$$\ln Y = \ln a + t \ln b + \ln u$$

$\ln a$ and $\ln b$ values were obtained using the ordinary least squares procedures. The compound growth rate " r " was computed by using relationship; $r = (\text{Antilog of } (\ln b) - 1) * 100$.

Cuddy Della Valle Instability Index (CDVII)

To examine the extent of variability in the export and import, the Cuddy-Della Valle Index was used (Cuddy & Della Valle, 1978).

$$\text{CDVI index (\%)} = CV * \sqrt{(1 - \text{AdR}^2)}$$

Where;

CV = Coefficient of variation (in percent)

R squared = Coefficient of determination from a time-trend regression adjusted by the number of degrees of freedom.

The range of Cuddy-Della Valle Instability Index is as stated below (Sihmar, 2014).

CDVI= 0 to 15= Low Instability

30<CDVI>15= Medium Instability

CDVI>30= High Instability

Revealed Comparative Advantage (RCA)

Revealed comparative advantage is one of the measures of international competitiveness and has gained general acceptance (Utkulu & Seymen, 2004). The RCA, first introduced by Balassa (1965) is mathematically estimated as:

$$RCA_{ij} = \frac{(X_{ij} / X_j)}{(X_{wj} / X_w)}$$

Where;

RCA_{ij} is the revealed comparative advantage of the ith country for the jth commodity,

X_{ij} is the ith country's global exports of the commodity j,

X_i is the ith country's total exports to the world, X_{wj} is the world exports of the commodity j, and X_w is the total world exports

A product for which the value of RCA index exceeds one is said to possess global comparative advantage.

RCA<1: the product has no capacity of competitiveness

1<RCA<2.5: the product has a low capacity of competitiveness

RCA>2.5: the product has a high capacity of competitiveness

Revealed Symmetric Comparative Advantage (RSCA)

The Revealed Symmetric Comparative Advantage measure reflects the RCA in its symmetric form as an index of competitiveness. As applied by Kondal (2018), RSCA for Nepalese lentil was calculated as;

$$RSCA = (RCA-1)/(RCA+1)$$

Where; the RSCA ranges from [-1 to +1]. The closer the value is to +1, the higher the competitiveness of a country in the commodity of interest.

Export Performance Ratio (EPR)

Export performance ratio is a measure of international trade specialization. It identifies the comparative advantage or disadvantages a country has for a commodity with respect to another country or group of countries or the world. As suggested by Balassa (1965), export performance ratio (EPR) was used to measure the comparative advantage of the lentil exports from Nepal from 2015 to 2019 A.D.

The EPR of the ith commodity can be expressed as;

$$EPR_i = (E_i/CE)/(W_i/WE)$$

Where;

E_i=Export of lentil commodity from Nepal

CE=Aggregate export of agricultural products from Nepal

W_i= Total world export of lentil product

WE=Total world export of agricultural products

A value of EPR greater than unity implies that Nepal has a comparative advantage in the exports of lentil products and vice versa.

Trade Specialization Index

The trade specialization index evaluates the comparative advantage of product exports and its competitiveness (Sujova et al., 2015). Following Verter (2016) the export trade specialization index (TSI) for lentil commodity from Nepal was analyzed using following mathematical equation;

$$TSI_{ji} = \frac{x_j^i - M_j^i}{x_j^i + M_j^i}$$

where: TSI_{ji} is the index of trade specialization of economy j for goods i in a given period; i denotes the product or product group; j stands for the economy (nation or nation group); X_{ij} represents economy's j exports of goods i; and M_{ij} denotes economy's j imports of goods i. The range of values is between -1 and +1; the positive value signifies that an economy has net exports (thus, it specializes in the production of the particular product). Conversely, a negative value means that an economy imports more than it exports (net consumption). For a country and a specific product, the TSI would be -1 if there is import only and no export means perfect import specialization and value +1 if there is export only and no imports means perfect export specialization (Quansah and Ahn, 2017). TSI would be 0 for a balanced trade and if it greater than 0, it means that the product has a trade surplus and export competitiveness exists. TSI is also known as normalized trade balance by individual product because it measures the degree of specialization in the production/consumption of goods through trade.

Table 1: Decision rules based on trade specialization index value

TSI value	Decision criteria
TSI equals to -1	Introduction stage
Greater than -1 and less than 0	Import substitution stage
Greater than 0 and less than or equal to 1	Export growth stage

Market Concentration and Degree of Diversification

The Herfindahl Hirschman Index (HI) was used in this study to measure the degree of diversification based on the shares of various importing countries in Nepal’s lentil export at a point of time. The index was computed by taking the sum of the squares of the proportion of each importing country (Hirsch & Lev 1971). Algebraically,

$$HI = \sum_{i=1}^n P_i^2 \quad i = 1, 2, \dots, n.$$

Where;

Pi = proportion of ith country in Nepal’s total export (lentil), and

n = number of all importing countries.

Increases in the Herfindahl index generally indicate a decrease in competition and an increase of market power, whereas decreases indicate the opposite.

As followed by United State Department of Justice and Federal Trade Commission (2010) the value of HHI can be interpreted as;

HHI<1500= competitive market

1500<HHI>2500= moderately concentrated market

HHI>2500= highly concentrated

HHI= or Around 10,000= monopoly market

Result and Discussion

Global Trade of Lentil

Lentils dried, shelled (HS 071340) ranks 4346th (out of 4826) with value -1.42 in the Product Complexity Index (PCI) which shared 0.0099% in worlds trade (WEF, 2019). In 2019, the world’s total trade of lentil was with a value of

\$1.8 billion with export growth of 6.04 per cent. Nepal exported \$11523 thousand and imported \$ 18344 thousands, resulting in a negative trade balance of \$6821 in the trade of lentil dried, shelled (FAOSTAT, 2019). As per TRADEMAP (2019) the top exporters of lentils dried, shelled were Canada (\$909M), Australia (\$202M), Turkey (\$187M), United States (\$127M) and United Arab Emirates (\$116M). Whereas; top importers where India (\$318M), Bangladesh (\$181M), Turkey (\$135M), United Arab Emirates (\$107M) and Pakistan (\$70.8M).

In 2019, Canada alone had an about 50 percent export share in world’s lentil export followed by Australia (11.2), Turkey (10.4), UAE (6.47) and Russia (2.93). With export share of only 1.02 percent, India was the top importer of lentil with share of 17.7 percent followed by Bangladesh (10.0), Turkey (7.47) and UAE (5.95). In South Asian countries, India, Bangladesh, Sri Lanka and Pakistan are the largest lentil importer (Fig. 1). The finding concludes that Nepal’s lentil with high comparative advantage can gain export potentialities by creating favorable export to India, Bangladesh, Pakistan and Sri Lanka which are the major importers and neighboring countries. Also, India and Bangladesh have imposed zero percent tariff rate, whereas; Sri Lanka and Pakistan have imposed 4.5 and 3 percent tariff (OEC, 2019).

Export Import scenario of lentil from Nepal

In Nepal, lentil is the most important export (29.6% of agricultural exports), next cardamom (7%), wheat (6.7%), tea is fourth (and has a high value-adding component), and vegetables are fifth (ADS, 2014). Nepal occupies the 18th position in the list of lentil exporters in the world market. In 2019, Nepal exported 11241MT of lentil with a value of 11523 thousand US dollar (FAOSTAT, 2019). Whereas; it imported 38946 Mt. with value of 18344 thousand US dollar which is more than three times of exported amount.

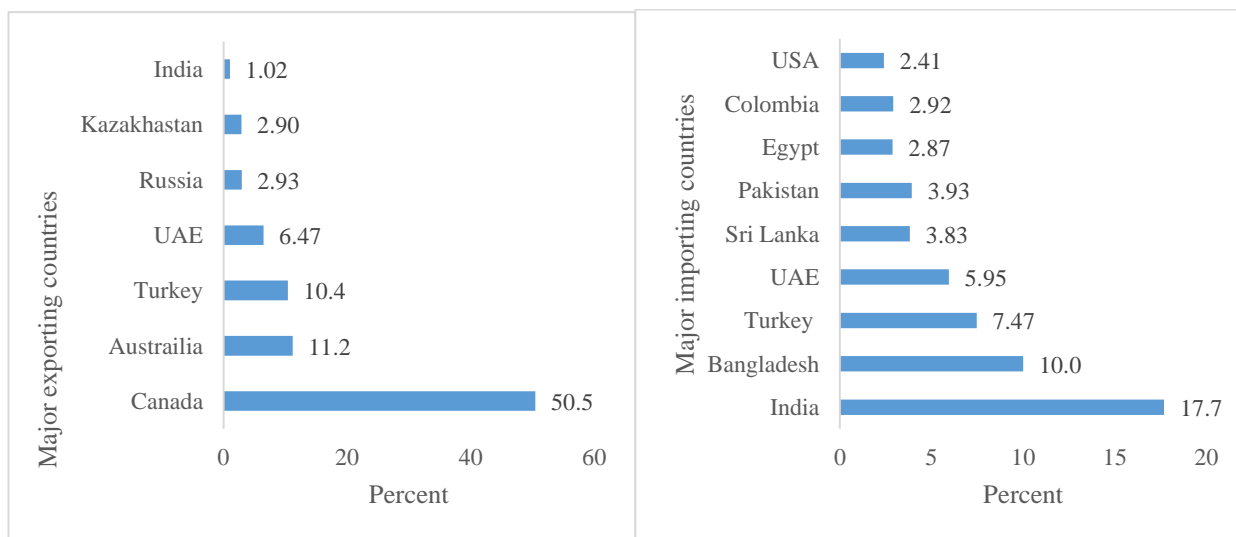


Fig. 1: World’s export and import share of lentil dried, shelled by countries (2019)

[Source: TRADEMAP, 2019]

The trend analysis on export import of lentil from 1990 to 2019 showed that there was highly fluctuation trade of lentil (Figure 2 & 3). The trend line shows there was very negligible import and higher export to import till 2013, thereafter the trend of import of lentil in Nepal seems higher than export. The year 1993 and 2009 were very favorable in case of export of lentil which was dropped down drastically in 2015. Import of lentil was found increased tremendously in 2017 and declining thereafter. Similar to this findings TEPC (2011) reported that, lentil was Nepal's third largest exportable commodity during the year 2009-10. Also, USAID (2011) reported that, Nepal listed among the top ten exporters and was 5th in 2009 and 2010 in terms of quantity and value in US dollar exported.

Growth Analysis of Lentil Export and Import from Nepal

The compound annual growth rates (CAGR) for export and import of lentil in Nepal in terms of quantity and value during the period 1990-2004, 2005-2019 and 1990-2019 (Table 2). Result showed that there is negative growth in export value, export quantity in pre-WTO and post-WTO period respectively. Further, the growth rate of 40.31 and

42.24 per cent per annum has been noticed in import value and quantity during the overall period. In 30 years, the export quantity is found negative growth with 0.43 percent whereas; export value found with the growth of 1.44 percent positively. During post-WTO period, the export value of lentil found with positive growth of 3.12 percent from negative of 0.46 percent during the pre-WTO period in Nepal. Also, the percent growth in import value and quantity of lentil in Nepal during post-WTO period found 9.32 and 10.72 which was 62.50 and 66.79 percent respectively in pre-WTO period. The export performance of lentil in terms of quantity and value was found somehow better in post-WTO period. The result revealed that the export growth of lentil from Nepal during 30 years (1990 to 2019) is very poor and nominal (1.44) whereas; growth in import is very high showing high economic risks and deficit situation in the country. During the period 1991-2013, Kumar et al., (2016) reported CAGR of 2.1 and 2.6 in export quantity and export value and CAGR of 60.9 and 53.9 in import quantity and import value of lentil in Nepal respectively.

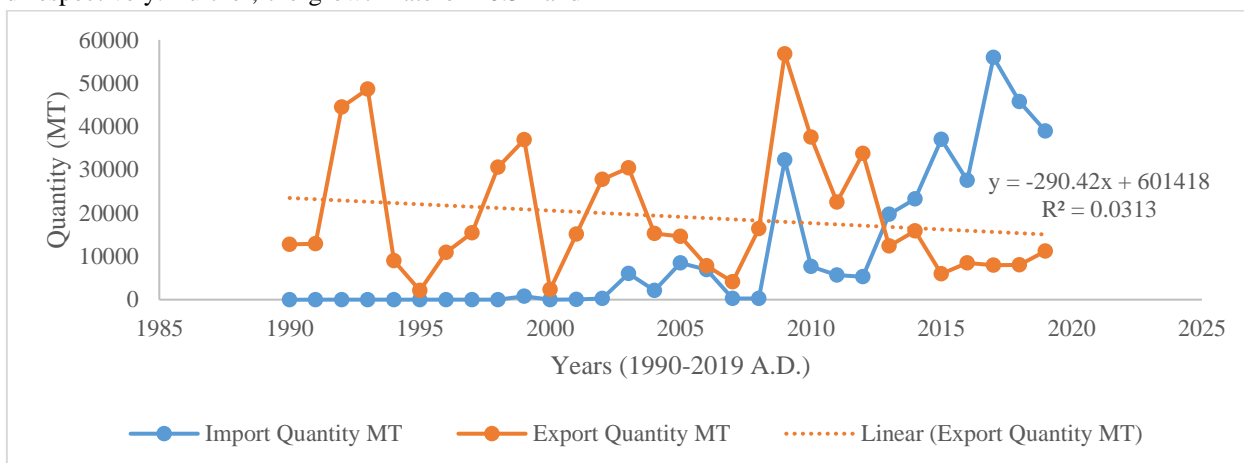


Fig. 2: Trend of lentil export and import (in quantity) from Nepal (1990-2019 A.D.)
[Data source: FAOSTAT, 2019]

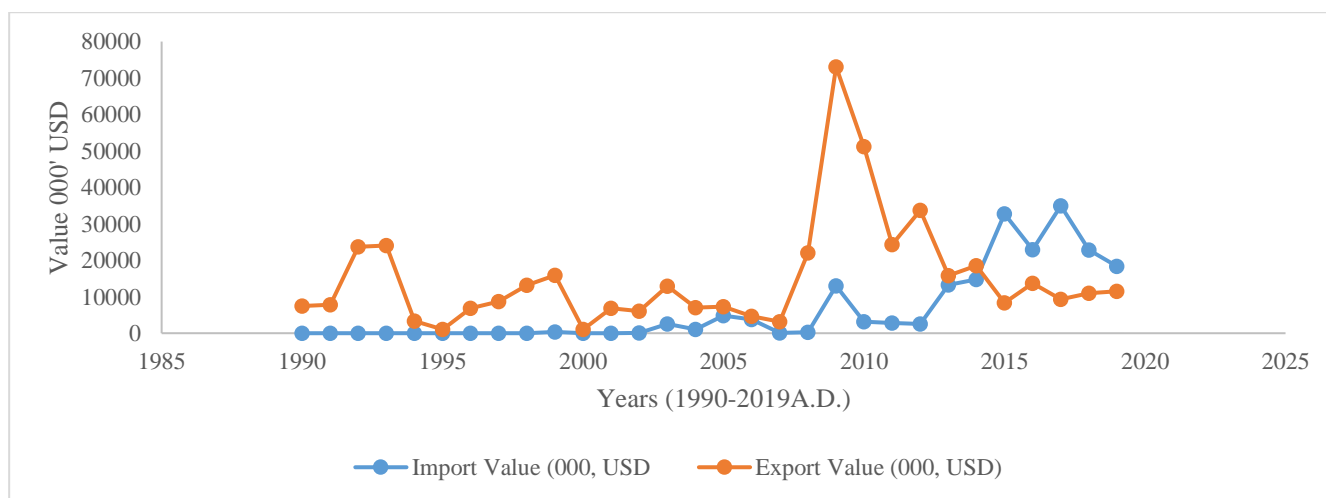


Fig. 3: Trend of lentil export and import (in value) from Nepal (1990-2019 A.D.)
[Data source: FAOSTAT, 2019]

Table 2: CAGR (in %) of export and import of Lentil, Nepal (1990-2019)

Variables	Period I (1990-2004)	Period II (2005-2019)	Overall (1990-2019)
% Change in Export Value	-0.46	3.12	1.44
% Change in Export Quantity	1.18	-1.72	-0.43
% Change in Import Value	62.50	9.32	40.31
% Change in Import Quantity	66.79	10.72	42.24

*Value in thousands USD and Quantity in metric ton.

Source: FAOSTAT, 2019 and author's computation

Table 3: Cuddy Della Valle Instability Index (CDVII) of export/import of Lentil during pre and post WTO period in Nepal (1990-2019 A.D.)

Period I (1990-2004)	Variables	CV	AdR ²	CDVII	Inference
Pre-WTO	Export Value	72.63	-0.02047	73.36	High Instability
	Export Quantity	69.49	-0.07604	72.08	High Instability
	Import Value	250.58	0.25824	215.82	High Instability
	Import Quantity	258.59	0.23988	225.45	High Instability
Period II (2005-2019)	Variables	CV	AdR ²	CDVII	Inference
Post-WTO	Export Value	93.45	-0.04612	95.58	High Instability
	Export Quantity	83.09	-0.00220	83.18	High Instability
	Import Value	91.66	0.57766	59.57	High Instability
	Import Quantity	85.06	0.61078	53.07	High Instability
Overall period (1990-2019)	Variables	CV	AdR ²	CDVII	Inference
Overall period (1990-2019)	Export Value	93.45	0.02094	92.46	High Instability
	Export Quantity	83.09	-0.00325	83.22	High Instability
	Import Value	91.66	0.56035	60.78	High Instability
	Import Quantity	149.91	0.59968	94.85	High Instability

Source: TRADEMAP and author's computation, 2021

Table 4: Export performance and comparative advantage for Nepalese lentil (2015-2019)

Indicators	2019	2018	2017	2016	2015
Export performance ratio (EPR)	21.16	36.41	24.54	34.47	19.85
Revealed Comparative Advantage (RCA)	125.45	165.37	88.57	118.75	68.31
Revealed Symmetric Comparative Advantage (RSCA)	0.984	0.987	0.977	0.983	0.971

Source: TRADEMAP and author's computation, 2021

Instability in Export and Import of Lentil from Nepal

Details of instability in lentil export and import in terms of quantity and value during overall period (1990 to 2019 A.D.) and sub-periods are presented in Table 3. During the entire period, high instability was found in all variables. Wherever, highest variation was noticed for period I in comparison to period II. Higher variation was observed in export value (92.46) and import quantity (94.85) during the overall period. Similarly, Rimal & Gurung (2017) reported that, the instability indices indicate that there has been substantial fluctuation in the export and import of pulses in Nepal. USAID (2011) in the study about value chain/market analysis of the lentil subsector in Nepal also reported that, the lentil exports have significantly fluctuated in volume and value over the last ten years, mainly due to lack of production and export diversification.

During the sub-period analysis, highest instability was noticed in import value (215.82) and import quantity (225.45) during Pre-WTO period (1990 to 2004) which may be due to sudden increment in import of lentil compared

with previous years. During post-WTO period higher instability was found in export value (95.58) and export quantity (83.18). Taking consideration to growth trend and instability both, the lentil export in Nepal is showing low growth and high instability indicating moderate to high risks in future trade. Deve *et al.* (2007) also mentioned that, Nepal's lentil export performance is thus somewhat irregular and suffers instability.

Trade Potential of Lentil Export from Nepal

Export performance details of lentil in Nepal are presented in Table (3). For the analysis, value for total exports of Nepal and Total exports from the world was taken as total merchandise trade from trade map and FAOSTAT website. From the result, export of Nepalese lentil from 2015 to 2019 enjoys RCA greater than 1 which means Nepal lentil export had a comparative advantage in the world export of total lentil. From the Table 4 it can be depicted that; Nepal enjoys relatively strong competitiveness in export of lentil and it's increasing constantly. In the year 2015 Nepal's RCA index in lentil export was measured 68.31 and in 2019 it jumped to 125.45 which clearly showed the comparative advantage

and export strength in lentil export. Further the RSCA value in all years from 2015 to 2019 was found nearby +1 i.e., 0.97 to 0.98, indicating higher competitiveness of Nepal in the export of lentil. Similar to this finding, the Nepal Trade and Competitiveness Study pinpointed lentil as a top most product as the "areas of opportunity" (MoICS, 2004). Salike & Lu (2012) resulted that, in accordance with Nepal's priority strategy in the agricultural sector lentils have the highest RCA indices as; 755.9, 624.2 and 319.8 in 2009, 2010 and 2011 respectively.

Table 5: RCA value of lentil export for major lentil producing countries (2019)

Country	RCA Value	Country	RCA Value
Canada	21.3	Singapore	0.091
UAE	4.73	India	0.56
Australia	7.17	China	0.044
Turkey	10.0	Colombia	0.062
Kazakhstan	8.71	Bangladesh	0.048
Afghanistan	26.7	Ethiopia	0.029

Source: OEC, 2019

Similarly, Canada, UAE, Australia, Turkey, Kazakhstan and Afghanistan are also enjoying comparative advantage of exporting lentil (Table 5). The higher value of $RCA > 1$ indicates lentil has a proportionately good share in national export of these countries. Whereas; the country with giant economy and with higher trade history like India, China,

Singapore and Colombia, Bangladesh, Ethiopia possesses RCA value in lentil export less than one indicating no global comparative advantage and no capacity of competitiveness in world's lentil export market. Taking in consideration to this, Nepal can be benefited from the export of lentil in world's market with higher comparative advantage.

Trade Specialization Index for Lentil from Nepal

While assessing the export competitiveness of lentil commodity from Nepal in-between the period 1990 to 2019, the TSI value ranges from 1 in 1988 to -0.23 in 2019 (Table 6). This result showed that the export performance of lentil from Nepal was highly competitive and lying in the export growth stage. From 1990 to 2019, Nepali lentil observed losing the competitiveness strength and lying in the import substitution stage from export growth stage. The export performance was strong enough till 2014 and thereafter loosing continuously. The TSI value in the range of negative value ($TSI < 0$), Nepal is experiencing dependency on imports of the lentil commodity. Trade specialization index value suggest that even though the country's performance fluctuated over the years, it remains in the stage of import substitution declining from growth stage and have witnessed positive direction to revive and regain the lentil export performance from Nepal

Table 6: Export performance competitiveness of lentil commodity by Trade Specialization Index

Year	TSI	Decision criteria	Reference
1990	1.00	Export growth stage	Strongly competitiveness
1991	1.00	Export growth stage	Strongly competitiveness
1992	1.00	Export growth stage	Strongly competitiveness
1993	1.00	Export growth stage	Strongly competitiveness
1994	1.00	Export growth stage	Strongly competitiveness
1995	1.00	Export growth stage	Strongly competitiveness
1996	1.00	Export growth stage	Strongly competitiveness
1997	1.00	Export growth stage	Strongly competitiveness
1998	1.00	Export growth stage	Strongly competitiveness
1999	0.95	Export growth stage	Strongly competitiveness
2000	1.00	Export growth stage	Strongly competitiveness
2001	0.99	Export growth stage	Strongly competitiveness
2002	0.97	Export growth stage	Strongly competitiveness
2003	0.67	Export growth stage	Strongly competitiveness
2004	0.74	Export growth stage	Strongly competitiveness
2005	0.20	Export growth stage	Strongly competitiveness
2006	0.11	Export growth stage	Strongly competitiveness
2007	0.93	Export growth stage	Strongly competitiveness
2008	0.98	Export growth stage	Strongly competitiveness
2009	0.70	Export growth stage	Strongly competitiveness
2010	0.88	Export growth stage	Strongly competitiveness
2011	0.79	Export growth stage	Strongly competitiveness
2012	0.86	Export growth stage	Strongly competitiveness
2013	0.09	Export growth stage	Strongly competitiveness
2014	0.11	Export growth stage	Strongly competitiveness
2015	-0.59	Import substitution stage	Weakly competitiveness
2016	-0.25	Import substitution stage	Weakly competitiveness
2017	-0.58	Import substitution stage	Weakly competitiveness
2018	-0.35	Import substitution stage	Weakly competitiveness
2019	-0.23	Import substitution stage	Weakly competitiveness

Data source: FAOSTAT, 2019

Table 7: Market concentration and degree of diversification of lentil export from Nepal

Year	Herfindahl-Hirschman Index	Inference	Number of importing countries
2019	9273.21	Monopoly	6
2018	9144.71	Monopoly	7
2017	8551.96	Nearly Monopoly	6
2016	7892.31	Highly concentrated	6
2015	6397.76	Highly concentrated	4
2009	3773.70	Concentrated	27

Source: TRADEMAP and author's computation, 2021

Market Concentration and Diversification for Nepalese Lentil

The Herfindahl-Hirschman Index in lentil export from Nepal showed on and around 9000 in year 2018 and 2019 indicating a decrease in competition and an increase of market power with high concentration and low competitive (Table 7). The export scenario of lentil in the year from 2015 to 2019 can be said highly concentrated and almost monopoly market. The export seems higher concentrated with Bangladesh and diversified only in 4 to 7 countries. As lentil export is concentrated only in few countries with higher index value, Nepal will certainly face economic risks in short and long run. Similar to this finding, Acharya (2019) reported that, Nepal is also unable to diversify its trade in terms of countries and commodities.

However, the result showed that in 2009 there was comparatively low market concentration of lentil export (3773.7) and export diversified in 27 countries including Bangladesh, Singapore and other European and African countries. Government should promote and explore new diversified markets for lentil export. For market diversification of lentil export, ADS (2014) also suggested support for establishment of research unit at the national level within Trade and Export Promotion Centre for market intelligence and market research for export diversification.

Conclusion

The thirty years data on export and import of lentil from Nepal shows increasing trend of import with high fluctuation. There is negative growth in export value, export quantity in pre-WTO and post-WTO period respectively which revealed that the export growth of lentil from Nepal during 30 years is very poor and nominal whereas; growth in import is very high showing deficit situation in the country. The annual growth rate observed higher in value compared to quantity indicating price competitiveness and increased world demand for Nepalese lentil. Instability indices for export and import in value and quantity were found higher and can be interpreted as higher variability during the study period. Taking consideration to growth trend and instability both, the lentil export in Nepal is showing low growth and high instability indicating moderate to high risks in future trade. Trade specialization index value suggest that even though the country's performance fluctuated over the years, it remains in the

stage of import substitution declining from growth stage and have witnessed positive direction to revive the lentil export performance from Nepal.

Although suffering from trade deficit, Nepalese lentil export shows a strong competitiveness in the world export of total lentil and can be benefited from the export in world's market with higher comparative advantage. But, the major portion of exports of Nepali lentils is found only limited to few countries. Lentil Trade is found largely dependent upon Bangladesh. With concentration analysis, a decrease in competition and an increase of market power with high concentration and low competitive nature was found creating undiversified trade leading to economic risks. Top exporters India, Sri Lanka and Pakistan could become potential neighbor markets and new destinations apart from Bangladesh and also export volume can be increased enough due its higher competitiveness and comparative advantage. Nepal should seek opportunities being the member of world trade organization especially in the case of exportable commodity like lentil.

Nepal by implementing its trade competitiveness strategies, export promotion schemes and diversification in export destinations for lentil can only improve lentils trade. The export promotion policies and programs should be in line with consistent growth of lentil production and exports with low instability. Lentil exporters company and firms should be given priority with certain schemes and strengthen them for linkage and buy-back arrangement with producers and diversified markets.

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