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# LENTIL MARKET ASSESSMENT REPORT

NEPAL, ECONOMIC, AGRICULTURE, AND TRADE ACTIVITY

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## KEY MESSAGES

- 1. The lentil sector in Nepal has high potential for growth and exports.** This has been confirmed directly by importers in Bangladesh, analysis of the export potential using trade data, and assessment of the yield gap potential in Nepal. As already pointed out by ITC in 2007, the target of 100,000 tons of exports of lentils is an achievable one if the proper actions are taken. In addition to Bangladesh there is a growing demand for the lentils produced by Nepal in other countries. These include South Asian countries such as Sri Lanka, Middle Eastern countries such as UAE, Southeast Asian countries such as Singapore and Malaysia and other non-Asian countries such as USA.
- 2. Increased exports of Nepali lentil depend on resolving supply constraints and being able to address SPS requirements.** The current exports of lentil from Nepal are dominated by Bangladesh imports. That market arose in the aftermath of the Indian export ban on pulses in 2007. Maintaining and even increasing the export volume to Bangladesh and other countries will require improving the supply response in Nepal that currently is constrained by low productivity, fragmented production, disorganized supply chain, lack of linkages among key actors in the chain (eg seed companies, research and extension providers, processors, exporters, and farmers), and lack of capacity in the food safety and quality assurance system to comply with increasing requirements.
- 3. In order to address these constraints, the lentil industry has to reorganize itself as an effective value chain.** Recommendations about what to do to develop the value chain are largely understood (productivity enhancement, postharvest and marketing, regulations and institutions) and have already been identified in the past. The key issue is how to move from recommendations to an implementation strategy.
- 4. The development of an effective lentil value chain requires changes both in policy and program design.** Lentil value chain development needs to be anchored in the Agricultural Development Strategy (ADS) and a national Flagship Program based on building a Lentil Value Chain Development Alliance (Lentil VCDA) have to be implemented. Key to the success of the VCDA is to ensure that farmers, processors, traders and input/service providers to the lentil industry are represented in the Board of the VCDA. Through these measures the positive changes initiated under NEAT might be sustained after project completion.

## EXECUTIVE SUMMARY

1. The primary objective of this report is the identification of alternative rapidly growing export markets in order to attract major buyers to source lentils from Nepal. The secondary objective is to secure and stabilize the present main export market for Nepalese lentils to Bangladesh.
2. The *Lentil Market Assessment Report* has been prepared through a combination of data collection and review of the literature, interviews with lentil industry stakeholders both in Kathmandu and the Terai, and importers in Bangladesh.
3. The report includes an assessment of potential export markets for Nepal lentil and an assessment of the Bangladesh market, a review of the Nepal lentil industry and its major constraints, and recommendations of how to tap the potential for exports of Nepal lentil.

### *POTENTIAL EXPORT MARKETS FOR NEPALESE LENTIL*

4. World exports of lentil have witnessed a sustained growth of over 6% annually over the past decade. This growth however is highly variable. In the case of Nepal, many changes in export volumes and values have reflected this high variability. Destination markets have also greatly changed after the export ban of India in 2007. Since then, the main export destination of Nepal lentil export has been Bangladesh. In addition to Bangladesh other potential markets have been assessed.
5. The assessment of potential markets has been based on a analysis of growth of demand for imports of lentils, type of lentils demanded, past market penetration, and interviews with traders. Potential export markets for Nepalese lentil, other than Bangladesh, are UAE, Singapore, Sri Lanka, Malaysia, and USA.
6. Dubai in UAE is the trade hub for channelling supplies to the Middle-East countries; demand in this market is growing fast at over 20%. Singapore is another trade hub for channelling export of Nepalese lentil in the world market; it has also rapid growth (18%) and prices are higher than in other markets. Singapore market demands small packs of 5 kg ready for retail selling.
7. In Sri Lanka, quality of Nepalese lentil is considered good as compared to other major exporters. However, exports to Sri Lanka present two difficulties. First the shipments to Sri Lanka have to go through Kolkata port in India which is adding considerable costs. Second, most Sri Lanka demand is for large grains and sourced mainly from Australia and Canada. That implies increasing pressure on Nepal's export to Sri Lanka to be priced competitively with supplies from Australia and Canada.
8. Malaysia demand for lentils is growing rapidly at over 30% and Nepal has been exporting regularly there since 2008. USA demand is growing at almost 8% and Nepal has been exporting modest quantities over 2009 and 2010. Food safety and quality requirements in this market are higher than the other potential markets.

9. All together, these 5 markets represent about 14% of the volume of the Bangladesh market for Nepal over the period 2009-2011. However, their demand is growing much faster (weighted average of 14%) than demand from Bangladesh (4.4%).

10. The main challenges for Nepalese lentil industry to tap the potential of these markets are (i) price; (ii) consistency of supply; and (iii) SPS requirements. In spite of generally perceived higher quality of Nepali lentil, the price premium over cheaper lentils from major exporters such as Canada, and USA is between 60% and 90%. As long as the price difference reflects a true quality difference (for example, whole grains and taste) and the share of Nepali lentil is small (ranging between 1 and 10% of total imports), there should not be difficulty on the demand side for Nepal to continue and even expand its exports to these countries. However, the marketing strategies should be quite clear, and products should be branded to ensure market segmentation. As these markets demand split lentil, it will be possible for Nepalese exporters to be slightly more competitive in price since millers in Nepalgunj and Birgunj indicated that split lentil (*dal*) is priced 15-20 percent lower than whole lentil (*chanta*).

11. Branding also carries with it the need of consistency of supplies. The experience of Nepal lentil exports has been one of highly fluctuating supplies, either due to market or weather conditions.

12. SPS requirements so far have not represented a major impediment to Nepali Lentil exports. However, in the future the situation is likely to change, as an increasing number of importing countries will require certificates for maximum residue level or MRL (eg. glyphosate herbicide levels), persistent organic pollutants or POPs, and radiation tests that are currently not easily available in Nepal; in fact Nepal does not have accredited laboratories which can conduct these tests and issue certificates.

13. So the strategy to tap the potential of exports to countries other than Bangladesh includes branding, ensuring consistency of supplies, and improving the capacity in food safety assurance.

### *BANGLADESH MARKET*

14. Bangladesh is the main destination of lentil exports from Nepal. Over the period 2009-2011, Bangladesh imported 90% of total export of lentil from Nepal. This opportunity is created by the India export ban of pulses (including lentil); before the ban in 2007 India used to be the major supplier of lentil to Bangladesh. Until the Indian ban for lentil remains, Nepal's geographic proximity and road connection means Bangladesh will remain the major destination for lentil export from Nepal. With India banning its export, Nepal is also the best choice for Bangladesh for meeting its increasing import needs. Nepal is exporting about 30,000 tons of lentils to Bangladesh, representing about 20% of total lentil imports of Bangladesh.

15. Meeting certification requirements for exports to Bangladesh is not a major problem. Exports to Bangladesh are of super fine quality. The exporters use the service of Kolkata based surveyor companies at nominal service charge for independent certification of quality, quantity and weight for every consignment.

16. Interviews with private importers as well as with Trading Corporation of Bangladesh or TCB (a parastatal involved in the importation of lentils and other commodities to stabilize the market in Bangladesh, and importing about one third of total Nepali lentils into Bangladesh) have highlighted that Bangladesh is eager to import more lentils from Nepal. Nepalese small grain red lentil is very much liked in Bangladesh for its better taste, and commands premium price over other leading exporting countries (Australia, Canada and USA).

17. This potential for Nepali lentil exports to Bangladesh is constrained by a number of factors but primarily by supply constraints in Nepal where production is mostly rainfed, fragmented among a large number of unorganized and small farmers with low input and technology use, and with high cost of production. Even modest increases in demand have been met in the past by steep increase in prices. Bangladesh importers have often complained about Nepali exporters reneging on delivery commitment as soon as pressures on the market cause prices to increase.

18. The majority of the imports of lentils in Bangladesh is supplied by the large exporters such as Canada and Australia. The advantage of these exporters is low price and consistency of deliveries. If Nepal intends to export more to Bangladesh it would need to improve its price competitiveness (that is reducing costs) and its consistency in supplies.

19. The trade relations between Nepal and Bangladesh are not directly between exporters and importers but are mediated by a small number of agents that have been selected by the Nepali exporters to organize trade. This is partly a reflection of problems in payments encountered in the past, but it is also a reflection of the lack of direct interaction between the main associations of traders in the two countries. A call for direct encounters among the key players both in Nepal and Bangladesh with the facilitating role of relevant commerce ministries would probably go a long-way into addressing and finding solution of most of the difficulties currently faced in payments, transportation, loading and unloading, quality assurance, and inspection. This will also reduce transaction cost, and help Nepalese lentil to become price competitive.

20. The final issue for Nepal is to be able to prepare for the eventuality that India removes its ban on export of pulses. India is pursuing a policy to improve productivity of pulses and if successful, this policy might result in sufficient domestic production in India to make redundant the export ban. In that situation, the traditional trade relations between Indian exporters and Bangladeshi importers might resume to the detriment of Nepal. Only through a determined policy by Nepal to increase competitiveness and build strong commercial relations with the lentil importers in Bangladesh will the existing trade between the two countries be able to continue and even increase.

#### *THE NEPAL LENTIL EXPORT INDUSTRY AND ITS CONSTRAINTS*

21. Over 90% of the total production of about 200,000 tons of lentil in Nepal is produced in twenty Terai districts by about 600,000 smallholder farmers using a cultivated area of about one third of a hectare. Yields are about 1 ton/ha and compare favorably with other South Asian countries however they are considerably below their potential of 1.5 to 2 tons/ha. Production is highly dependent on weather and occurs mostly on rainfed areas with marginal use of irrigation and fertilizer inputs. Access to improved seeds is extremely limited because of a non-functioning seed system and

marginal investments in research and extension. The investment in research and extension is low not only in absolute terms but also in terms of overall contribution to the value of production (more than \$200 million) and value of exports (more than \$40 million).

22. The high potential for exports to Bangladesh and other countries can hardly be fulfilled given a fragmented supply base characterized by unorganized smallholder and marginal farmers who are hardly reached by the extension and input distribution system. Therefore, in spite of a well identified import demand for lentils from Nepal, Nepal is hardly able to generate a supply response that could meet this demand and embark the sector on a sustained export growth.

23. Increases in productivity are necessary in order to lower the cost of production and become more competitive in international markets, while, at the same time, increasing the profitability of farmers and therefore the incentives of lentil relatively to other competing crops. In addition to improved seeds, farming practices, and improved water efficiency, considerable gains could be also attained with postharvest technology, particularly improved cleaning and sorting at the farm-gate, so as to reduce wastages estimated to be up to 15%.

24. Processing does not seem to be a major constraint to exports, in fact there is underutilized capacity of mills possessing good equipment. The quality of lentils they can produce is acceptable by importing countries. The issue of phytosanitary and food safety requirements is more difficult. As requirements in importing countries become more stringent, the existing food safety and quality assurance system of Nepal is not adequate and will require improved capacity and accredited laboratories to carry out the required analysis of MRL, radiation, and POP.

25. Other issues in the industry include obstacles such as unauthorized local taxes, scarcity of containers, and electricity load shedding, all of which are elements that contribute to higher costs and more difficulty in trade; however these obstacles are not specific to the lentil industry.

26. A major issue is that the industry is not well organized as an effective value chain. There are few attempts (??) by the processors to link up with farmers, traders, and input and service providers, to create a value chain organization where stakeholders work together to identify problems and solutions while disseminating information to its members and lobbying for a stronger policy support.

27. The final critical issue is the absence of a clear policy support for the value chain. This might soon change with new initiatives planned under the Agricultural Development Strategy (ADS).

### *RECOMMENDATIONS*

28. Recent studies of the lentil value chain in Nepal have made detailed and insightful assessments and identified the key issues of the sector. Recommendations have also been generally well formulated and comprehensive. However, most recommendations have not been implemented and projects and programs that have tried to help the sector have not been able to ensure that the industry could embark on a self-sustaining growth path. While *what to do* is relatively clear, *how to do it* is less clear.

29. Regarding *What to Do*, the main recommendation is to enhance the development of the lentil value chain through production, marketing and regulatory/institutional support. This will consist of a three pronged approach including (i) improved production and productivity of lentil at the farm level; (ii) improved postharvest operations and marketing of lentil; and (iii) improved regulatory framework and institutions for lentil sub-sector. Without a well-organized value chain linking producers to input providers, processors, exporters, and service providers, the potential for increasing exports to Bangladesh and other potential markets will be difficult to achieve. Increasing food safety requirements by importing countries and competition will make the future prospects for Nepali exports more challenging if the country continues to do business as usual.

30. Regarding *How to Do it*, the main recommendations consist of (i) a Lentil Policy and (ii) a National Program (Lentil Flagship). The development of the lentil value chain requires a clear policy anchored on the incoming Agricultural Development Strategy (ADS) which will guide agricultural sector in the next 20 years; and a specific approach to implement a national program on lentils.

31. Policy. The prioritization of the lentil value chain in the ADS will ensure support over a long period (5 to 10 years) along all the stages of the value chain in order to achieve national impact. Sufficient resources and policy commitment will be harnessed to ensure that the value chain can achieve value added or export targets such as those listed in the ITC “lentil export promotion action plan” with 100,000 ton export in the medium term (5 to 10 years). Without a clear policy and investment commitment to the sector, sustained over a sufficient period of time, the value chain will remain in a highly fluctuating state, highly vulnerable to the vagaries of climate and international markets. Increasing exports to Bangladesh or other potential markets will be difficult in light of the supply constraints, institutional weaknesses, and highly competitive nature of the world market.

32. Lentil Flagship. The national program on lentil (i) will be looking at and developing all the stages of the value chain, from seeds to final products, from production to processing, from market infrastructure to access roads and connectivity, from postharvest technology to quality assurance and exports; (ii) will strengthen linkages among associations of farmers, traders, processors, input providers and other value chain actors in order to ensure effective investment; (iii) will aim at replication and linkages beyond the district and achieve national impact; and (iv) will work not only with one district or department but across districts and departments. The manager of the lentil program will be the CEO of the Lentil Value Chain Development Alliance (Lentil VCDA). The Lentil VCDA is a society registered according to the law of Nepal, owned by the key representatives of the lentil industry including farmers and their associations, entrepreneurs, input providers, logistics operators, warehouse managers, cooperatives, and other value chain actors. The commonality of all the actors is that they are all engaged commercially on the lentil value chain and are interested in promoting its commercial development. The Lentil VCDA will have access to a Lentil Value Chain Development Fund (Lentil VCDF) to conduct investment to improve the value chain that will be based on a matching grant approach and managed by the VCDA. The operations of the VCDA will be audited according to the law. Moreover, they will also be audited according to regulations of the Development Partners supporting the VCDF.

## Short-term Intervention: Trade Dialogues between Importers and Exporters

33. During the visit to Bangladesh importers of Nepali lentil, it was found that there are hardly direct relations between exporters in Nepal and importers in Bangladesh. Most of the time, the trade relations are mediated by agents. This intermediation adds to the cost of trade. Its rationale is the general mistrust and lack of familiarity between exporters and importers. To remedy this situation, it is recommended to hold regular meetings between Nepali exporters and Bangladeshi importers both in Dhaka and Kathmandu. The purpose is to ensure that through dialogue and exchange of information solutions to problems constraining trade be found, more trusting relations could be established, and direct relations between importers and exporters could be established.

# 1 INTRODUCTION

## 1.1 BACKGROUND

34. The Nepal NEAT Program is a task order under the SEGIR GBTI II IQC, designed to promote economic growth, reduce poverty, increase food security, and improve lives in Nepal. NEAT addressed these challenges through 5 main components: 1) Fostering a conducive business environment for private sector led growth; 2) Encouraging competitiveness and exports in selected agricultural and non-agricultural commodities or services; 3) Enhancing food security; 4) Improving trade and fiscal policies and practices to facilitate trade and increase revenues without distorting the economy; and 5) Strengthening microfinance policy and institutions to increase the access of women, poor and disadvantaged to financial services.

35. USAID's NEAT Activity has been supporting Nepal's lentil sector with the objective of increasing its competitiveness on the global market. In March 2012, NEAT partnered with FORWARD to address issues of productivity through demonstration plots, increasing access to improved varieties, and grading lentils through sieving. NEAT partnered with Durga Dal Mill to modernize their machinery, resulting in increased export capabilities. While productivity and export capability have improved, actual exports could be improved through a more thorough understanding of foreign markets. NEAT would like to conduct a market analysis to improve Nepal's exports to its main export destination, Bangladesh, and to identify promising new markets.

36. Nepal's lentil is "pink, small in size and sweet in taste" – a combination of characteristics that are appreciated both by South Asia and Middle East consumers. Nepal is recognized as a significant player in the world's lentil market. In 2011 it ranked number sixth as producer and fifth as exporter of lentil. The world market has been expanding at a yearly rate of 6.8 % in value and 6.2 % in volume over the past ten years (Dev, Munankami and Bijl 2007)<sup>1</sup>. It is estimated that exports revenues deriving from lentil could be doubled or even tripled in the medium term if relevant actions are taken in order to boost production, productivity and exports volumes. The ITC report recommended the concerned stakeholders to undertake finalization and implementation of a "Lentil export promotion action plan" aiming at exporting 100,000 MT/year on the medium term.

## 1.2 OBJECTIVES OF THIS REPORT

37. The primary objective of this report is the identification of alternative rapidly growing export markets in order to attract major buyers to source lentils from Nepal. The secondary objective is to secure and stabilize the present main export market for Nepalese lentils to Bangladesh.

## 1.3 METHODOLOGY

38. This report is based on the combination of methods including literature review; compilation and analysis of data from secondary sources such as FAOSTAT, ITC Trade

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<sup>1</sup> Dev, F., R. Munankami, and B. Bijl (2007), The Lentils Sector in Nepal: Export Performance and Potential. Project financed by the EU and ITC under Asia Trust Fund.

Map, and TEPC; meeting with stakeholders in Kathmandu and field visits to the Terai and Bangladesh.

## 2 NEPAL LENTIL EXPORT MARKETS

39. Nepal produces small-size 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. Until 2007, India was the major export destination of Nepalese lentil, and from there it was exported to other countries. Since 2007 however India banned exports of lentils and that has created a major opportunity for lentil exports from Nepal to third countries. The countries that have demand for and had imported lentils from Nepal are reported in Table 1.

**Table 1 Export of Lentil from Nepal to different Countries (in MT), 2002 - 2012**

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Australia								520			
Baharain								66	48		25
Bangladesh	5,588	5,364	7,590	2,708	4,680	8,093	16,388	34,801	30,625	36,955	29,580
Bhutan						119			100		
Brazil								48			
Canada							142	768	355		
Egypt								2,332			
France							42	65			
Germany							72	120			
Guadeloupe								120			
Hongkong											2
India	16,917	19,402	12,619	15,252	14,591	2,844	4,889	1,130	169	83	3,196
Italy							44	701	299		
Jordan									92		
Korea R	146	65					24	71		20	
Kuwait								563	5		
Lebanon								154			
Malaysia							88	190	930		
Morocco								72			
Oman								88			
Qatar								68			
Saudi Arabia								807	96		
Sierra Leone								221	216		
Singapore							235	1,619	198	367	300
Sri Lanka							352	1,152	1,778		
Sudan								565			
Suriname							120	618	162		
Turkey								4,155			
U.A.E.							447	3,769	749		49
U.K.							42	382	125		
U.S.A.							360	1,603	1,625		

Total :	22,939	24,830	20,209	17,960	19,270	11,056	23,245	56,768	37,570	37,425	33,151
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Source: Trade and Export Promotion Center (TEPC), Kathmandu; ITC Trade Map data.

40. Pakistan may be considered for inclusion in the list for being a leading lentil importer and a potential importer for Nepal, even though there was no export of lentil from Nepal to this market. The list of countries that have a demand for Nepalese lentil may be grouped based on geographical clusters as follows:

- (a) South-Asian Countries: India, Bangladesh, Sri Lanka, Pakistan, Bhutan
- (b) Middle-East Countries: UAE, Saudi Arabia, Bahrain, Egypt, Jordan, Kuwait, Lebanon, Oman, Qatar
- (c) East Asian Countries: Singapore, Malaysia, South Korea, Hong Kong (China)
- (d) Countries Outside Asia: USA, UK, Turkey, Canada, Italy, Australia, Brazil, France, Germany, Morocco, Sierra Leone, Sudan

## 2.1 SOUTH ASIA

### 2.1.1 Bangladesh

41. The current trade statistics for import of lentil by Bangladesh from different countries (Table 2) indicate that Australia (48.5 percent), Nepal (29.5 percent) and Canada (20.5 percent) are the three leading suppliers of lentils to Bangladesh. In terms of price (CIF), Nepalese lentil was found to command over 50 percent higher prices (US\$ 1,084) to that from other major suppliers, Australia (US\$ 691) and Canada (US\$ 712).

**Table 2 Quantity and prices of lentil imports by Bangladesh from different markets in 2011**

Exporters	Imported quantity (MT)	Share in Bangladesh's imports (%)	CIF price (US\$/MT)
World	74,704	100.0	811
Australia	36,259	48.5	691
Nepal	22,001	29.5	1,084
Canada	15,311	20.5	712
USA	723	1.0	617
Singapore	259	0.3	656
Turkey	151	0.2	1,099

Source: ITC Trade Map

42. India was the major supplier of lentils to Bangladesh before it restricted its export of pulses, including lentil in 2007 (Table 3). The deficit in Bangladeshi import of lentil from India is being replaced by increased export of the same from Nepal. Looking at the Nepalese export of lentil to Bangladesh and India (Table 3 and Table 4) over the years, it is clear that Nepal has shifted its export from India to Bangladesh. On the part of Bangladesh, a substantial portion of deficit in supplies of lentil from India is being fulfilled from increased supplies of the same from Nepal.

**Table 3 Volume of Lentils Import by Bangladesh (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	55,411	109,662	101,260	64,058	128,626	174,043	49,379	177,673	152,230	74,704
Nepal <sup>2</sup>	5,588	5,364	7,590	2,708	4,680	8,093	16,388	34,801	30,625	36,955
India <sup>1</sup>	59,112	62,542	65,451	120,040	81,070	1,413	0	0	0	0

Source: <sup>1</sup> ITC Trade map; <sup>2</sup> TEPC Nepal.

**Table 4 Volume of Lentil Export from Nepal to India (in MT), 2001-2011**

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
15,206	16,917	19,402	12,619	15,252	14,591	2,844	4,889	1,130	169	83

Source: ITC (2007); ITC Trade map.

43. The average annual growth rate of import demand for lentils by Bangladesh based on its imports during past years (2001-11) is estimated to be at 4.4 percent (Table 5). Using this rate, it is projected that the country will import about 163,000 MT of lentils from the world market in 2017. If Nepal's share in Bangladeshi imports is assumed to continue at 29.5 percent (Table 2), the demand for Nepalese lentil in Bangladesh market alone is expected to be 48,120 MT in the year 2017.

**Table 5 Annual Growth Rate and Projections of Lentil Imports by Bangladesh**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
4.4	137,207	142,389	147,571	152,753	157,935	163,117

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

### 2.1.2 India

44. In 2011, India imported 102,365 MT of lentils at an average CIF price of US\$ 665 per MT. Indian imports of lentils in recent years come largely from Canada and USA; these together accounted for 90 percent of the supplies (Table 6). The average FOB prices per MT for supplies of lentils in 2011 from the major sources Canada, USA and Australia were US\$ 649, US\$ 776 and US\$ 678, respectively.

**Table 6 Quantity and prices of lentil imports by India from different markets in 2011**

Exporters	Imported quantity (MT)	Share in India's imports (%)	CIF price (US\$/MT)
World	102,365	100.0	665
Canada	82,443	80.5	649
USA	9,727	9.5	776
Australia	2,262	2.2	678
China	1,988	1.9	674
Taipei	729	0.7	888
Philippines	809	0.8	676
Pakistan	386	0.4	762
UAE	383	0.4	708

Exporters	Imported quantity (MT)	Share in India's imports (%)	CIF price (US\$/MT)
Spain	375	0.4	651
Italy	397	0.4	587
Czech Republic	366	0.4	577
Norway	276	0.3	721
Myanmar	251	0.2	685
Switzerland	250	0.2	664
Tanzania	250	0.2	660
Sri Lanka	229	0.2	716
Maldives	181	0.2	746
Belgium	108	0.1	759
Argentina	125	0.1	624
Côte d'Ivoire	127	0.1	591
Indonesia	102	0.1	696
Turkey	92	0.1	750
Greece	100	0.1	580
Viet Nam	93	0.1	570
Poland	75	0.1	680
Bahrain	89	0.1	539
Malaysia	48	0.0	875
Saudi Arabia	54	0.1	704
Mozambique	51	0.0	725

Source: ITC Trade Map

45. Nepal was one of the major suppliers of lentil to India until 2006, and thereafter its share has gone down substantially to as low as only 83 MT in the year 2011 (Table 7). Discussion with Nepalese millers and exporters revealed that only small quantity of the product is exported to the eastern states of Bengal and Assam where the consumers have preference for small grain red lentil from Nepal. The price in the Indian market is considered to be not that attractive for export of Nepalese lentil as compared to Bangladesh; besides the Nepalese exporters do not get export incentive (2-4% of export value) from the government for exports to India.

**Table 7 Volume of Lentils Import by India (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	97,988	35,413	31,544	32,842	51,613	225,365	36,003	197,328	250,543	102,365
Nepal <sup>2</sup>	16,917	19,402	12,619	15,252	14,591	2,844 <sup>1</sup>	4,889 <sup>1</sup>	1,130	169	83

Source: <sup>1</sup> ITC trade map; <sup>2</sup> TEPC, Nepal

46. The average annual growth rate of import demand for lentils in India based on its imports during past years (2001-11) is estimated to be at 13.1 percent (Table 8). And, it is projected that the country will import about 255,598 MT of lentils from the world market in 2017 (Table 8). If export restrictions by India continue, and cheaper imports continue being sourced from Canada, USA and Australia, it is likely that **India will not be an attractive destination for export of premium priced Nepal lentil.**

**Table 8 Annual Growth Rate and Projections of Lentil Imports by India**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
13.1	185,460	199,488	213,516	227,534	241,571	255,598

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

### 2.1.3 Sri Lanka

47. In 2011, Sri Lanka imported 151,339 MT of lentils at an average CIF price of US\$ 772 per MT. Sri Lankan imports of lentils in recent years come largely from Australia and Canada; these together accounted for 91 percent of the supplies (**Table 9**). The average CIF prices per MT for supplies of lentils in 2011 from the major sources Australia, Canada, and UAE were US\$ 752, US\$ 803, and US\$ 843, respectively.

**Table 9 Quantity and prices of lentil imports by Sri Lanka from different markets in 2011**

Exporters	Imported quantity (MT)	Share in Sri Lanka's imports (%)	CIF Price (US\$/unit)
World	151,339	100.0	772
Australia	99,911	66.0	752
Canada	38,307	25.3	803
UAE	8,325	5.5	843
USA	1,847	1.2	765
Turkey	1,236	0.8	843
India	652	0.4	859
Hong Kong	575	0.4	788
Singapore	261	0.2	943
Malaysia	115	0.1	800
Tokelau	66	0.0	924
Andorra	43	0.0	953

Source: ITC Trade Map

48. During last 10 years, Sri Lanka had import of lentil from Nepal only in three years, 2008-10 and had reached up to 1,778 MT in 2010. However, there was no import of lentil from Nepal in 2011 (**Table 10**), and also in 2012 (**Table 1**). Discussion with Nepalese millers and exporters revealed that the demand for lentils in Sri Lanka is of bold type red lentils in split grains, and these are mainly sourced from Australia and Canada at relatively much cheaper price as compared to small grain red lentil from Nepal.

**Table 10 Volume of Lentils Import by Sri Lanka (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	106,559	90,947	89,576	86,389	107,781	103,206	102,710	107,983	134,340	151,339
Nepal <sup>2</sup>	-	-	-	-	-	-	352	1,152	1,778	-

Source: <sup>1</sup> ITC trade map; <sup>2</sup> TEPC, Nepal

49. The average annual growth rate of import demand for lentils in Sri Lanka based on its imports during past years (2001-11) is estimated to be at 4.4 percent (Table 11). It is projected that the country will import about 161,741 MT of lentils from the world market in 2017 (Table 11).

**Table 11 Annual Growth Rate and Projections of Lentil Imports by Sri Lanka**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
4.4	136,189	141,300	146,410	151,520	156,631	161,741

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

#### 2.1.4 Pakistan

50. In 2011, Pakistan imported 98,433 MT of lentils at an average CIF price of US\$ 669 per MT. Pakistani imports of lentils in recent years come largely from Canada and Australia; these together accounted for 88 percent of the supplies (Table 12). The average CIF prices per MT for supplies of lentils in 2011 from the major sources Canada, Australia, USA and Afghanistan were US\$ 671, US\$ 661, US\$ 730 and US\$ 580, respectively.

**Table 12 Quantity and prices of lentil imports by Pakistan from different markets in 2011**

Exporters	Imported quantity (MT)	Share in Pakistan's imports (%)	CIF price (US\$/MT)
World	98,433	100.0	669
Canada	51,746	52.6	671
Australia	35,288	35.8	661
USA	4,694	4.8	730
Afghanistan	4,222	4.3	580
Italy	1,656	1.7	827
Turkey	155	0.2	774
Sri Lanka	144	0.1	785
Kuwait	138	0.1	812
Singapore	149	0.2	725
China	101	0.1	713
Iran	115	0.1	461
Myanmar	24	0.0	792

Source: ITC Trade Map

51. During last 10 years, lentil import of Pakistan was lowest of 27,920 MT in 2004 and highest of 98,433 MT in 2011. During the period, it had so far import of lentil from Nepal only once in 2009 of 110 MT (Table 13).

**Table 13 Volume of Lentils Import by Pakistan (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World	NA	32,529	27,920	68,669	95,265	78,851	51,853	73,157	85,684	98,433
Nepal	-	-	-	-	-	-	-	110	-	-

Source: ITC trade map.

52. The average annual growth rate of import demand for lentils in Pakistan based on its imports during past years (2001-11) is estimated to be at 12.2 percent, and it is projected that the country will import about 135,119 MT of lentils from the world market in 2017 (**Table 14**).

**Table 14 Annual Growth Rate and Projections of Lentil Imports by Pakistan**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
12.2	101,579	108,287	114,995	121,703	128,411	135,119

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

### 2.1.5 Bhutan

53. In 2010, Bhutan imported 1,534 MT of lentils, all from India at an average CIF price of US\$ 768 per MT (Table 15). The ITC Trade Map data shows India as the sole supplier of lentils to Bhutan during 2005-10. However, Nepalese statistics of export during 2001-12 shows Bhutan to have import of lentil in 2007 of 119 Mt and in 2010 of 100 MT. Given Indian export restriction for the product, Nepal could have opportunity for export of lentil to Bhutan, but the size of the market is very small, and it will have to compete with cheaper supply from India.

**Table 15 Quantity and prices of lentil imports by Bhutan from different markets in 2010**

Exporters	Imported quantity (MT)	Share in Bhutan's imports (%)	CIF price (US\$/MT)
World	1,534	100.0	768
India	1,534	100.0	768

Source: ITC Trade Map

## 2.2 MIDDLE EAST

### 2.2.1 United Arab Emirates

54. In 2011, the UAE imported 138,241 MT of lentils at an average CIF price of US\$ 865 per MT (Table 16). The UAE imports of lentils in recent years come largely from Canada and Australia; these together accounted for 92 percent of the total imports of lentils (Table 16). The average CIF prices per MT for supplies of lentils in 2011 from the major sources Canada, Australia, and USA were US\$ 943, US\$ 612 and US\$ 790, respectively.

**Table 16 Quantity and prices of lentil imports by UAE from different markets in 2011**

Exporters	Imported quantity (MT)	Share in UAE's imports (%)	CIF price (US\$/MT)
Total	138,241	100.0	865
Canada	97,740	70.7	943
Australia	29,270	21.2	612
USA	6,892	5.0	790

Sri Lanka	1,942	1.4	939
Turkey	1,071	0.8	962
Malaysia	895	0.6	861
Egypt	347	0.3	1,086
Singapore	50	0.0	1,460
Germany	6	0.0	3,167
Italy	3	0.0	4,000
Oman	12	0.0	833
India	9	0.0	1,111
Lebanon	3	0.0	2,333

Source: ITC Trade Map

55. During last 10 years, UAE had import of lentil from Nepal only in three years, 2008-10 and had reached up to 3,769 MT in 2009 (Table 17). Discussion with Nepalese millers and exporters revealed that UAE being a major trading hub (Dubai) in the Middle East, this is a potential export market for Nepalese lentil.

**Table 17 Volume of Lentils Import by UAE (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	41,382	17,846	NA	19,735	81,693	64,540	82,537	125,185	113,653	138,241
Nepal <sup>2</sup>	-	-	-	-	-	-	447	3,769	749	-

Source: <sup>1</sup> ITC trade map and FAOSTAT; <sup>2</sup> TEPC, Nepal

56. The average annual growth rate of import demand for lentils in the UAE based on its imports during past years (2001-11) is estimated to be as high as 20.8 percent (Table 18). It is projected that the country will import about 208,618 MT of lentils from the world market in 2017 (Table 18).

**Table 18 Annual Growth Rate and Projections of Lentil Imports by UAE**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
20.8	143,795	156,759	169,724	182,689	195,653	208,618

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

### 2.2.2 Egypt

57. In 2011, Egypt imported 94,333 MT of lentils at an average CIF price of US\$ 1,033 per MT (Table 19). The UAE imports of lentils in recent years come largely from Canada, Turkey and Australia; these together accounted for about 95 percent of the total imports of lentils (Table 19). The average CIF price per MT for supplies of lentils in 2011 from the major sources Canada, Turkey and Australia was US\$ 1033.

**Table 19 Quantity and prices of lentil imports by Egypt from different markets in 2011**

Exporters	Imported quantity (MT)	Share in Egypt's imports (%)	CIF price (US\$/MT)
World	94,333	100.0	1,033
Canada	44,237	46.9	1,033
Turkey	33,692	35.7	1,033
Australia	11,452	12.1	1,033
USA	3,526	3.7	1,033
Syria	1,241	1.3	1,034
Ethiopia	182	0.2	1,033
Thailand	2	0.0	1,000

Source: ITC Trade Map

58. During last 10 years, Egypt had import of lentil from Nepal only once in 2009 amounting to 2,332 MT (Table 20). Discussion with Nepalese millers and exporters revealed that Egypt with tradition consumer of red lentils from Turkey could a potential export market for Nepalese lentil.

**Table 20 Volume of Lentils Import by Egypt (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	100,287	61,177	88,701	108,257	76,784	84,463	66,364	91,475	108,075	94,333
Nepal <sup>2</sup>	-	-	-	-	-	-	-	2,332	-	-

Source: <sup>1</sup> ITC trade map and FAOSTAT; <sup>2</sup> TEPC, Nepal

59. The average annual growth rate of import demand for lentils in Egypt based on its imports during past years (2001-11) is estimated to be -0.2 percent (Table 21). It is projected that the country will import about 86,275 MT of lentils from the world market in 2017 (Table 21).

**Table 21 Annual Growth Rate and Projections of Lentil Imports by Egypt**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
-0.2	88,090	87,727	87,364	87,001	86,638	86,275

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

### 2.2.3 Bahrain:

60. In 2011, Bahrain imported 2,700 MT of lentils at an average CIF price of US\$ 898 per MT (Table 22). Bahrain imports of lentils in that year came largely from UAE, Canada and Myanmar; these together accounted for about 75 percent of the total imports (Table 22). The average CIF price per MT for supplies of lentils in 2011 from the major sources UAE, Canada and Myanmar were US\$ 841, US\$ 840 and US\$ 995, respectively. It also had high priced imports (more than US\$ 1,000 per MT) from Syria, Australia,

India and USA. Nepal also had supply of lentil to this country in that year (25 MT), but priced at lower value US\$ 880 per MT.

**Table 22 Quantity and prices of lentil imports by Bahrain from different markets in 2011**

Exporters	Imported quantity (MT)	Share in Bahrain's imports (%)	CIF price (US\$/MT)
World	2,700	100.0	898
UAE	1,078	39.9	841
Canada	652	24.1	840
Myanmar	402	14.9	995
Syria	123	4.6	1,154
Australia	131	4.9	1,015
Sri Lanka	120	4.4	808
Turkey	74	2.7	1,014
India	46	1.7	1,043
USA	22	0.8	1,136
Nepal	25	0.9	880
Thailand	16	0.6	875

Source: ITC Trade Map

61. During last 10 years, Bahrain had import of lentil from Nepal regularly since 2009, though of small volume (25-66 MT) (Table 23). Discussion with Nepalese millers and exporters revealed that Bahrain in the Middle East with tradition consumer of red lentils could a potential export market for Nepalese lentil.

**Table 23 Volume of Lentils Import by Egypt (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	2,019	2,351	2,139	2,787	1,413	2,131	2,506	2,075	3,228	2,700
Nepal <sup>2</sup>	-	-	-	-	-	-	-	66	48	25

Source: <sup>1</sup> ITC trade map and FAOSTAT; <sup>2</sup> TEPC, Nepal

62. The average annual growth rate of import demand for lentils in Bahrain based on its imports during past years (2001-11) is estimated to be 2.9 percent, and it is projected that the country will import about 3,087 MT of lentils from the world market in 2017 (Table 24).

**Table 24 Annual Growth Rate and Projections of Lentil Imports by Bahrain**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
2.9	2,729	2,801	2,872	2,944	3,016	3,087

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

#### 2.2.4 Saudi Arabia

63. In 2011, Saudi Arabia imported 26,387 MT of lentils at an average CIF price of US\$ 891 per MT (Table 25). Saudi imports of lentils in that year came largely from

Turkey and Canada; together accounted for about 95 percent of the total imports (Table 25). The average CIF price per MT for supplies of lentils in 2011 from these major sources Turkey and Canada were US\$ 919 and US\$ 813, respectively.

**Table 25 Quantity and prices of lentil imports by Saudi Arabia in 2011**

Exporters	Imported quantity (MT)	Share in Saudi Arabia's imports (%)	CIF price (US\$/MT)
Total	26,387	100.0	891
Turkey	18,682	70.8	919
Canada	6,365	24.1	813
Sri Lanka	709	2.7	931
Egypt	221	0.8	1,086
Malaysia	211	0.8	706
USA	169	0.6	485
Jordan	25	0.1	1,520

Source: ITC Trade Map

64. During last 10 years, Saudi Arabia had total imports of lentils from the world market ranging from 21,031 MT (in 2002) to 41,359 MT (in 2010; and import of lentil from Nepal only twice in 2009 (807 MT) and 2010 (96 MT) (Table 26). Discussion with Nepalese millers and exporters revealed that Saudi Arabia with tradition consumer of red lentils from Turkey could a potential export market for Nepalese lentil.

**Table 26 Volume of Lentils Import by Saudi Arabia (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	21,031	24,110	32,087	32,766	35,254	34,103	29,675	NA	41,359	26,387
Nepal <sup>2</sup>	-	-	-	-	-	-	-	807	96	-

Source: <sup>1</sup> ITC trade map and FAOSTAT; <sup>2</sup> TEPC, Nepal

65. The average annual growth rate of import demand for lentils in Saudi Arabia based on its imports during past years (2001-11) is estimated to be 3.6 percent, and it is projected that the country will import about 41,981 MT of lentils from the world market in 2017 (Table 27).

**Table 27 Annual Growth Rate and Projections of Lentil Imports by Egypt**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
3.6	36,739	37,788	38,836	39,884	40,932	41,981

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

### 2.2.5 Kuwait

66. In 2011, Kuwait imported 7,672 MT of lentils at an average CIF price of US\$ 1,099 per MT (Table 28). Kuwait's import of lentils in that year came largely from Turkey accounted for about 88 percent of the total imports (Table 28). The average CIF

price per MT for supplies of lentils in 2011 from the major sources Turkey, Sri Lanka, Egypt and Canada were US\$ 1,114, US\$ 924, US\$ 1,088 and US\$ 1,005, respectively.

**Table 28 Quantity and prices of lentil imports by Kuwait from different markets in 2011**

Exporters	Imported quantity (MT)	Share in Kuwait's imports (%)	CIF price (US\$/MT)
Total	7,672	100.0	1,099
Turkey	6,738	87.8	1,114
Sri Lanka	461	6.0	924
Egypt	205	2.7	1,088
Canada	189	2.5	1,005
Singapore	25	0.3	1,560
Malaysia	47	0.6	745
India	6	0.1	1,333
Lebanon	1	0.0	3,000

Source: ITC Trade Map

67. During last 10 years, Kuwait had total imports of lentils from the world market ranging from 3,454 MT (in 2009) to 9,787 MT (in 2006); and import of lentil from Nepal only twice in 2009 ( 563 MT) and 2010 ( 5 MT) ( Table 29). Discussion with Nepalese millers and exporters revealed that Kuwait with traditional consumer of red lentils from Turkey could be a potential export market for Nepalese lentil.

**Table 29 Volume of Lentils Import by Kuwait (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	NA	NA	NA	NA	9,787	7,260	9,311	3,454	7,643	7,672
Nepal <sup>2</sup>	-	-	-	-	-	-	-	563	5	-

Source: <sup>1</sup> ITC trade map and FAOSTAT; <sup>2</sup> TEPC, Nepal

68. The average annual growth rate of import demand for lentils in Kuwait based on its imports during past years (2001-11) is estimated to be 2.9 percent, and it is projected that the country will import about 8,768 MT of lentils from the world market in 2017 (Table 30).

**Table 30 Annual Growth Rate and Projections of Lentil Imports by Kuwait**

Growth Rate (% p.a.)	Projections for next 5 years (in MT)					
	2012	2013	2014	2015	2016	2017
2.9	7,895	8,069	8,244	8,419	8,593	8,768

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

### 2.2.6 Lebanon

69. In 2011, Lebanon imported 10,970 MT of lentils at an average CIF price of US\$ 1,090 per MT ( Table 31). Lebanon's import of lentils in that year came largely from Canada, Syria, Turkey and Australia; these together accounted for about 89 percent of the total imports (Table 31). The average CIF price per MT for supplies of lentils in 2011

from the major sources Canada, Syria, Turkey and Australia were US\$ 1,090, US\$ 1,486, US\$ 962 and US\$ 994, respectively.

**Table 31 Quantity and prices of lentil imports by Lebanon from different markets in 2011**

Exporters	Imported quantity (MT)	Share in Lebanon's imports (%)	CIF price (US\$/MT)
World	10,970	100.0	1,090
Canada	5,534	50.4	1,090
Syria	1,269	11.6	1,486
Turkey	1,663	15.2	962
Australia	1,260	11.5	994
USA	555	5.1	971
Egypt	437	4.0	954
Russia	210	1.9	890
Myanmar	23	0.2	783
France	2	0.0	6,000
India	9	0.1	1,222
Bangladesh	3	0.0	667
Mauritania	5	0.0	400

Source: ITC Trade Map

70. During last 10 years, Lebanon had total imports of lentils from the world market ranging from 7,532 M T (in 2002) to 15,000 M T (in 2008); and import of lentil from Nepal only once in 2009 of 154 MT (Table 32).

**Table 32 Volume of Lentils Import by Lebanon (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	7,532	7,503	9,126	7,950	10,938	9,213	15,000	10,965	11,845	10,970
Nepal <sup>2</sup>	-	-	-	-	-	-	-	154	-	-

Source: <sup>1</sup> ITC trade map and FAOSTAT; <sup>2</sup> TEPC, Nepal

71. The average annual growth rate of import demand for lentils in Lebanon based on its imports during past years (2001-11) is estimated to be 3.6 percent, and it is projected that the country will import about 11,582 MT of lentils from the world market in 2017 (Table 33).

**Table 33 Annual Growth Rate and Projections of Lentil Imports by Lebanon**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
3.6	10,085	10,384	10,684	10,983	11,282	11,582

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

### 2.2.7 Qatar

72. In 2011, Qatar imported 1,893 MT of lentils at an average CIF price of US\$ 938 per M T (Table 34). Qatar's import of lentils in that year came largely from Canada,

Australia, Sri Lanka and Turkey; these together accounted for about 99 percent of the total imports (Table 34). The average CIF price per MT for supplies of lentils in 2011 from the major sources Canada, Australia, Sri Lanka and Turkey were US\$ 906, US\$ 981, US\$ 897 and US\$ 986, respectively.

**Table 34 Quantity and prices of lentil imports by Qatar from different markets in 2011**

Exporters	Imported quantity (MT)	Share in Qatar's imports (%)	CIF price (US\$/MT)
Total	1,893	100.0	938
Canada	872	46.1	906
Australia	420	22.2	981
Sri Lanka	360	19.0	897
Turkey	221	11.7	986
Lebanon	20	1.1	1,650

Source: ITC Trade Map

73. During last 10 years, Qatar had total imports of lentils from the world market ranging from 1,366 MT (in 2009) to 7,386 MT (in 2008); and import of lentil from Nepal only once in 2009 of 68 MT (Table 35).

**Table 35 Volume of Lentils Import by Qatar (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	3,828	3,718	2,480	4,661	6,142	5,822	7,386	1,366	1,758	1,893
Nepal <sup>2</sup>	-	-	-	-	-	-	-	68	-	-

Source: <sup>1</sup> ITC trade map and FAOSTAT; <sup>2</sup> TEPC, Nepal

74. The average annual growth rate of import demand for lentils in Qatar based on its imports during past years (2001-11) is estimated to be -6.5 percent, and it is projected that the country will import about 2,524 MT of lentils from the world market in 2017 (Table 36).

**Table 36 Annual Growth Rate and Projections of Lentil Imports by Qatar**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
-6.5	3,146	3,022	2,897	2,773	2,649	2,524

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

### 2.2.8 Jordan

75. In 2011, Jordan imported 10,932 MT of lentils at an average CIF price of US\$ 979 per MT (Table 37). Jordan's import of lentils in that year came largely from Turkey, Canada and Syria; these together accounted for about 93 percent of the total imports (Table 37). The average CIF price per MT for supplies of lentils in 2011 from the major sources Turkey, Canada and Syria were US\$ 960, US\$ 937 and US\$ 1,041, respectively.

**Table 37 Quantity and prices of lentil imports by Jordan from different markets in 2011**

Exporters	Imported quantity (MT)	Share in Jordan's imports (%)	CIF price (US\$/MT)
World	10,932	100.0	979
Turkey	5,467	50.0	960
Canada	2,551	23.3	937
Syria	2,098	19.2	1,041
USA	334	3.1	1,231
Australia	397	3.6	904
Lebanon	23	0.2	1,783
Sri Lanka	27	0.2	1,111
Egypt	24	0.2	1,042
India	10	0.1	1,500

Source: ITC Trade Map

76. During last 10 years, Jordan had total imports of lentils from the world market ranging from 6,440 MT (in 2002) to 10,932 MT (in 2011); and import of lentil from Nepal only once in 2010 of 92 MT (Table 38).

**Table 38 Volume of Lentils Import by Jordan (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	6,440	6,868	8,152	8,726	9,450	7,332	8,637	8,202	9,182	10,932
Nepal <sup>2</sup>	-	-	-	-	-	-	-	-	92	-

Source: <sup>1</sup> ITC trade map and FAOSTAT; <sup>2</sup> TEPC, Nepal

77. The average annual growth rate of import demand for lentils in Qatar based on its imports during past years (2001-11) is estimated to be -6.5 percent, and it is projected that the country will import about 2,524 MT of lentils from the world market in 2017 (Table 39).

**Table 39 Annual Growth Rate and Projections of Lentil Imports by Jordan**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
3.6	10,085	10,384	10,684	10,983	11,282	11,582

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

### 2.2.9 Oman

78. In 2011, Oman imported 7,597 MT of lentils at an average CIF price of US\$ 817 per MT (Table 40). Oman's import of lentils in that year came largely from UAE accounted for about 91 percent of the total imports (Table 40). The average CIF price per MT for supplies of lentils in 2011 from the UAE was US\$ 839.

**Table 40 Quantity and prices of lentil imports by Oman from different markets in 2011**

Exporters	Imported quantity (MT)	Share in Oman's imports (%)	CIF price (US\$/MT)
World	7,597	100.0	817
UAE	6,930	91.2	839
Canada	350	4.6	543
Egypt	168	2.2	613
Myanmar	148	1.9	655

Source: ITC Trade Map

79. During last 10 years, Oman had total imports of lentils from the world market ranging from 1,921 M T (in 2002) to 7,597 M T (in 2011); and import of lentil from Nepal only once in 2009 of 88 MT (Table 41).

**Table 41 Volume of Lentils Import by Oman (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	1,921	NA	3,678	4,065	4,707	4,765	3,414	4,578	5,983	7,597
Nepal <sup>2</sup>	-	-	-	-	-	-	-	88	-	-

Source: <sup>1</sup> ITC trade map and FAOSTAT; <sup>2</sup> TEPC, Nepal

80. The average annual growth rate of import demand for lentils in Oman based on its imports during past years (2001-11) is estimated to be 11.6 percent, and it is projected that the country will import about 9,111 M T of lentils from the world market in 2017 (Table 42).

**Table 42 Annual Growth Rate and Projections of Lentil Imports by Oman**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
11.6	6,850	7,302	7,754	8,207	8,659	9,111

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

### 2.2.10 Morocco

81. In 2011, Morocco imported 5,517 M T of lentils at an average CIF price of US\$ 904 per MT (Table 43). Morocco's import of lentils in that year came largely from Canada accounted for about 95 percent of the total imports (Table 43). The average CIF price per MT for supplies of lentils in 2011 from the UAE was US\$ 902.

**Table 43 Quantity and prices of lentil imports by Morocco from different markets in 2011**

Exporters	Imported quantity (MT)	Share in Morocco's imports (%)	CIF price (US\$/MT)
Total	5,517	100.0	904
Canada	5,231	94.8	902
Egypt	111	2.0	1,090
Australia	168	3.0	690
France	4	0.1	6,500
Lebanon	3	0.1	1,667

Source: ITC Trade Map.

82. During last 10 years, Morocco had total imports of lentils from the world market ranging from 5,003 M T (in 2003) to 35,366 M T (in 2005); and import of lentil from Nepal only once in 2009 of 72 MT (Table 44).

**Table 44 Volume of Lentils Import by Morocco (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	14,130	5,003	7,914	35,366	19,461	31,911	24,702	19,385	16,250	5,517
Nepal <sup>2</sup>	-	-	-	-	-	-	-	72	-	-

Source: <sup>1</sup> ITC trade map and FAOSTAT; <sup>2</sup> TEPC, Nepal.

83. The average annual growth rate of import demand for lentils in Morocco based on its imports during past years (2001-11) is estimated to be 2.2 percent, and it is projected that the country will import about 20,447 MT of lentils from the world market in 2017 (Table 45).

**Table 45 Annual Growth Rate and Projections of Lentil Imports by Morocco**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
2.2	19,265	19,501	19,738	19,974	20,211	20,447

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

## 2.3 EAST ASIA

### 2.3.1 Singapore

84. In 2011, Singapore imported 3,636 MT of lentils at an average CIF price of US\$ 1,183 per MT (Table 46). The country's imports of lentils in recent years come largely from Myanmar, Thailand, Mozambique and Malaysia, Australia; these together accounted for 75 percent of the total imports of lentils (Table 46). The average CIF prices per MT for supplies of lentils in 2011 from the major sources Myanmar, Thailand, Australia, Mozambique and Malaysia were US\$ 1,311, US\$ 1,153, US\$ 1,454, US\$ 1,751 and US\$ 790, respectively.

**Table 46 Quantity and prices of lentil imports by Singapore from different markets in 2011**

Exporters	Imported quantity (MT)	Share in Singapore's imports (%)	CIF price (US\$/MT)
World	3,636	100.0	1,183
Myanmar	1,125	30.9	1,311
Thailand	524	14.4	1,153
Mozambique	339	9.3	1,454
Malaysia	253	7.0	1,751
Australia	471	13.0	790
India	222	6.1	860
Sri Lanka	167	4.6	904

Turkey	91	2.5	1,209
Nepal	174	4.8	598
UAE	102	2.8	1,010
Malawi	47	1.3	1,340
USA	20	0.6	2,950
Canada	47	1.3	1,000
South Africa	23	0.6	1,391
UK	5	0.1	2,600
France	2	0.1	5,000
Spain	8	0.2	1,250
New Zealand	8	0.2	1,125

Source: ITC Trade Map

85. During last 10 years, Singapore had total imports of lentils from the world market ranging from 655 MT (in 2003) to 3,636 MT (in 2011). Import of lentil from Nepal by this country has been regular since 2008; and in the year 2009 it was the main supplier with 1,620 MT (84 percent of total imports), but declined to only 367 MT in 2011 (Table 47).

86. Discussion with Nepalese millers and exporters revealed that Singapore being a major trading hub East Asia, this is a potential export market for Nepalese lentil.

**Table 47 Volume of Lentils Import by Singapore (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	1,094	655	714	881	902	1,236	2,877	1,988	2,684	3,636
Nepal <sup>2</sup>	-	-	-	-	-	-	235	1,620	198	367

Source: <sup>1</sup> ITC trade map and FAOSTAT; <sup>2</sup> TEPC, Nepal

87. The average annual growth rate of import demand for lentils in Singapore based on its imports during past years (2001-11) is estimated to be as high as 18.1 percent (Table 48), and it is projected that the country will import about 4,632 MT of lentils from the world market in 2017 (Table 48).

**Table 48 Annual Growth Rate and Projections of Lentil Imports by Singapore**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
18.1	3,236	3,515	3,795	4,074	4,353	4,632

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

### 2.3.2 Malaysia

88. In 2011, Malaysia imported 5,242 MT of lentils at an average CIF price of US\$ 860 per MT (Table 49). Malaysian imports of lentils in recent years come largely from Turkey, Canada, Sri Lanka and China; these together accounted for 95 percent of the total imports of lentils (Table 49). The average CIF prices per MT for supplies of lentils in 2011 from the major sources Turkey, Canada, Sri Lanka and China were US\$ 1,035, US\$ 587, US\$ 991 and US\$ 2,343, respectively.

**Table 49 Quantity and prices of lentil imports by Malaysia from different markets in 2011**

Exporters	Imported quantity (MT)	Share in Malaysia's imports (%)	CIF price (US\$/MT)
World	5,242	100.0	860
Turkey	1,991	38.0	1,035
Canada	2,277	43.4	587
Sri Lanka	437	8.3	991
China	276	5.3	1,293
Nepal	35	0.7	2,343
Australia	71	1.4	986
UAE	48	0.9	1,021
Egypt	24	0.5	1,208
India	24	0.5	1,042
Bangladesh	24	0.5	1,000
Myanmar	27	0.5	741
Italy	6	0.1	2,667
USA	2	0.0	2,000

Source: ITC Trade Map

89. During last 10 years, Malaysia had total imports of lentils from the world market ranging from 320 MT (in 2002) to 5,242 MT (in 2011); and it has been importing lentil from Nepal regularly since 2008, and had reached up to 930Mt in 2010 (Table 50).

**Table 50 Volume of Lentils Import by Malaysia (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	320	877	562	485	968	2,749	1,309	2,706	3,043	5,242
Nepal <sup>2</sup>	-	-	-	-	-	-	88	190	930	35

Source: <sup>1</sup> ITC trade map and FAOSTAT; <sup>2</sup> TEPC, Nepal

90. The average annual growth rate of import demand for lentils in Malaysia based on its imports during past years (2001-11) is estimated to be as high as 31.2 percent (Table 51), and it is projected that the country will import about 6,242 M T of lentils from the world market in 2017 (Table 51).

**Table 51 Annual Growth Rate and Projections of Lentil Imports by Malaysia**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
31.2	4,165	4,580	4,996	5,411	5,827	6,242

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

### 2.3.3 South Korea

91. In 2011, South Korea imported 5,517 M T of lentils at an average CIF price of US\$ 694 per MT (Table 52). South Korea's import of lentil in the year largely came from

Australia, India and Nepal; these together accounted for 78 percent of the total imports of lentils (Table 52). The average FOB prices per MT for supplies of lentils in 2011 from the major sources Australia, India and Nepal were US\$ 612, US\$ 435 and US\$ 800, respectively.

**Table 52 Quantity and prices of lentil imports by South Korea from different markets in 2011**

Exporters	Imported quantity (MT)	Share in R. Korea's imports (%)	CIF price (US\$/MT)
World	294	100.0	694
Australia	98	33.3	612
India	92	31.3	435
Nepal	40	13.6	800
France	5	1.7	4,200
Bangladesh	24	8.2	792
UAE	25	8.5	600
Canada	2	0.7	2,500
Myanmar	4	1.4	1,000
USA	1	0.3	4,000
Austria	2	0.7	1,000

Source: ITC Trade Map

92. During last 10 years, South Korea had total imports of lentils from the world market ranging from 132 MT (in 2003) to 340 MT (in 2005); and it has been importing lentil from Nepal since long, but not regular (Table 53).

**Table 53 Volume of Lentils Import by South Korea (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	164	136	232	340	204	188	213	148	228	294
Nepal <sup>2</sup>	146	65	-	-	-	-	24	71	-	40

Source: <sup>1</sup> ITC trade map and FAOSTAT; <sup>2</sup> TEPC, Nepal

93. The average annual growth rate of import demand for lentils in South Korea based on its imports during past years (2001-11) is estimated to be 1.7 percent, and it is projected that the country will import about 255 MT of lentils from the world market in 2017 (Table 54).

**Table 54 Annual Growth Rate and Projections of Lentil Imports by South Korea**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
1.7	238	241	245	248	252	255

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

#### 2.3.4 Hong Kong (China)

94. In 2011, Hong Kong imported 832 MT of lentils at an average CIF price of US\$ 810 per MT (Table 55). Hong Kong's import of lentils in the year came largely from

China, India, Thailand and UAE accounted for about 92 percent of the total imports (Table 55). The average CIF price per MT for supplies of lentils in 2011 from China, India, Thailand and UAE were US\$ 515, US\$ 1,762, US\$ 1,536 and US\$ 1,100, respectively.

**Table 55 Quantity and prices of lentil imports by Hong Kong from different markets in 2011**

Exporters	Imported quantity (MT)	Share in Hong Kong's imports (%)	CIF price (US\$/MT)
World	832	100.0	810
China	592	71.2	515
India	63	7.6	1,762
Thailand	56	6.7	1,536
UAE	50	6.0	1,100
Singapore	28	3.4	1,821
USA	27	3.2	1,481
Japan	8	1.0	1,750
Italy	6	0.7	2,000
Malaysia	1	0.1	1,000

Source: ITC Trade Map

95. During last 10 years, Hong Kong had total imports of lentils from the world market ranging from 288 MT (in 2008) to 888 MT (in 2002); and there was no import of lentil from Nepal during the period (Table 56).

**Table 56 Volume of Lentils Import by Hong Kong (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	888	701	645	635	497	450	288	787	685	832
Nepal <sup>2</sup>	-	-	-	-	-	-	-	-	-	-

Source: <sup>1</sup> ITC trade map and FAOSTAT; <sup>2</sup> TEPC, Nepal

96. The average annual growth rate of import demand for lentils in Hong Kong based on its imports during past years (2001-11) is estimated to be -2.9 percent, and it is projected that the country will import about 470 MT of lentils from the world market in 2017 (Table 57).

**Table 57 Annual Growth Rate and Projections of Lentil Imports by Hong Kong**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
-2.9	560	542	524	506	488	470

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

## 2.4 COUNTRIES OUTSIDE ASIA

### 2.4.1 Canada

97. In 2011, Canada imported 15,318 MT of lentils at an average CIF price of US\$ 918 per MT (Table 58). Canada's import of lentils in that year came largely from USA,

Australia, India and UAE accounting for about 94 percent of the total imports (Table 58). The average CIF price per MT for supplies of lentils in 2011 from USA, Australia, India and UAE were US\$ 789, US\$ 887, US\$ 1,582 and 1,371, respectively.

**Table 58 Quantity and prices of lentil imports by Canada from different markets in 2011**

Exporters	Imported quantity (MT)	Share in Canada's imports (%)	CIF price (US\$/MT)
World	15,318	100.0	918
USA	10,776	70.3	789
Australia	2,045	13.4	887
India	920	6.0	1,582
UAE	639	4.2	1,371
Thailand	429	2.8	1,513
Turkey	179	1.2	1,447
Singapore	151	1.0	1,338
Canada	37	0.2	2,189
Malaysia	50	0.3	1,260
Malawi	27	0.2	1,481
France	13	0.1	2,385
Mozambique	21	0.1	1,429
China	8	0.1	3,625
Pakistan	12	0.1	1,417
Italy	3	0.0	3,000

Source: ITC Trade Map

98. During last 10 years, Canada had total imports of lentils from the world market ranging from 8,060 MT (in 2002) to 20,620 MT (in 2010); and had imported lentil from Nepal in recent years with maximum of 768 MT in 2009 (Table 59).

**Table 59 Volume of Lentils Import by Canada (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	8,060	7,197	8,630	9,052	10,980	8,247	8,316	9,548	20,620	15,318
Nepal <sup>2</sup>	-	-	-	-	-	-	142	768	355	-

Source: <sup>1</sup> ITC trade map and FAOSTAT; <sup>2</sup> TEPC, Nepal

99. The average annual growth rate of import demand for lentils in Canada based on its imports during past years (2001-11) is estimated to be 9.0 percent, and it is projected that the country will import about 20,797 MT of lentils from the world market in 2017 (Table 60).

**Table 60 Annual Growth Rate and Projections of Lentil Imports by Canada**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
9.0	15,933	16,906	17,879	18,852	19,825	20,797

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

#### 2.4.2 Italy

100. In 2011, Italy imported 31,278 MT of lentils at an average CIF price of US\$ 1,040 per MT (Table 61). Italy's import of lentils in that year came largely from Canada, USA and Turkey together accounting for about 87 percent of the total imports (Table 61). The average CIF price per MT for supplies of lentils in 2011 from Canada, USA and Turkey were US\$ 1,008, US\$ 1,055 and US\$ 1,102, respectively.

**Table 61 Quantity and prices of lentil imports by Italy from different markets in 2011**

Exporters	Imported quantity (MT)	Share in Italy's imports (%)	CIF price (US\$/MT)
World	31,278	100.0	1,040
Canada	20,528	65.6	1,008
USA	4,535	14.5	1,055
Turkey	2,297	7.3	1,102
China	1,636	5.2	991
Australia	766	2.4	946
Portugal	349	1.1	1,639
Germany	211	0.7	1,773
Argentina	357	1.1	983
Netherlands	174	0.6	1,856
Spain	157	0.5	1,108
UK	88	0.3	1,466
India	44	0.1	1,477
Myanmar	44	0.1	1,341
Ukraine	44	0.1	1,091
UAE	18	0.1	1,722

Source: ITC Trade Map

101. During last 10 years, Italy had total imports of lentils from the world market ranging from 26,836 MT (in 2002) to 32,306 MT (in 2010); and imports of lentil from Nepal were in 2008, 2009 and 2010, with the highest of 701 MT in 2009 (Table 62).

**Table 62 Volume of Lentils Import by Italy (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	26,836	30,881	27,323	28,036	32,006	28,406	27,131	29,956	32,306	31,278
Nepal <sup>2</sup>	-	-	-	-	-	-	44	701	299	-

Source: <sup>1</sup> ITC trade map and FAOSTAT; <sup>2</sup> TEPC, Nepal

102. The average annual growth rate of import demand for lentils in Italy based on its imports during past years (2001-11) is estimated to be 1.0 percent, and it is projected that the country will import about 32,684 MT of lentils from the world market in 2017 (Table 63).

**Table 63 Annual Growth Rate and Projections of Lentil Imports by Italy**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
1.0	31,155	31,461	31,767	32,073	32,379	32,684

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

### 2.4.3 Australia

103. In 2011, Australia imported 2,604 MT of lentils at an average CIF price of US\$ 1,260 per MT (Table 64). Australia's import of lentils in that year came largely from Canada, Myanmar, Turkey and India together accounting for about 84 percent of the total imports (Table 64). The average CIF price per MT for supplies of lentils in 2011 from Canada, Myanmar, Turkey and India were US\$ 1,258, US\$ 1,455, US\$ 1,169 and US\$ 1,057, respectively.

**Table 64 Quantity and prices of lentil imports by Australia from different markets in 2011**

Exporters	Imported quantity (MT)	Share in Australia's imports (%)	CIF price (US\$/MT)
World	2,604	100.0	1,260
Canada	1,020	39.2	1,258
Myanmar	786	30.2	1,455
Turkey	231	8.9	1,169
India	159	6.1	1,057
Sri Lanka	106	4.1	896
Australia	91	3.5	1,011
Malaysia	60	2.3	1,333
UAE	66	2.5	788
USA	44	1.7	1,000
Thailand	24	0.9	1,042
Nepal	8	0.3	1,750
Iran	3	0.1	2,000
Lebanon	3	0.1	1,667
China	2	0.1	1,500
Italy	1	0.0	2,000

Source: ITC Trade Map

104. During last 10 years, Italy had total imports of lentils from the world market ranging from 1,488 MT (in 2004) to 2,604 MT (in 2011); and import of lentil from Nepal only once in 2009 of 520 MT (Table 65).

**Table 65 Volume of Lentils Import by Australia (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	1,928	1,612	1,488	1,560	2,171	1,847	2,176	1,997	2,591	2,604
Nepal <sup>2</sup>	-	-	-	-	-	-	-	520	-	-

Source: <sup>1</sup> ITC trade map and FAOSTAT; <sup>2</sup> TEPC, Nepal

105. The average annual growth rate of import demand for lentils in Australia based on its imports during past years (2001-11) is estimated to be 5.4 percent, and it is projected that the country will import about 3,104 M T of lentils from the world market in 2017 (Table 66).

**Table 66 Annual Growth Rate and Projections of Lentil Imports by Australia**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
5.4	2,575	2,681	2,786	2,892	2,998	3,104

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

#### 2.4.4 Sudan

106. In 2011, Sudan imported 58,761 MT of lentils at an average CIF price of US\$ 814 per MT (Table 67). Sudan's import of lentils in that year came largely from Turkey, USA and Egypt together accounting for about 96 percent of the total imports (Table 67). The average CIF price per MT for supplies of lentils in 2011 from Turkey, USA and Egypt were US\$ 897, US\$ 667 and US\$ 1,086, respectively.

**Table 67 Quantity and prices of lentil imports by Sudan from different markets in 2011**

Exporters	Imported quantity (MT)	Share in Sudan's imports (%)	CIF price (US\$/MT)
Total	58,761	100.0	814
Turkey	31,960	54.4	897
USA	22,444	38.2	667
Egypt	2,240	3.8	1,086
Ethiopia	481	0.8	1,191
Canada	500	0.9	894
Sri Lanka	403	0.7	965
Australia	225	0.4	898
Kenya	507	0.9	343
Uganda	1	0.0	2,000

Source: ITC Trade Map

107. During last 10 years, Sudan had total imports of lentils from the world market ranging from 19,541 M T (in 2002) to 58,761 MT (in 2011); and import of lentil from Nepal only once in 2009 of 565 MT (Table 68).

**Table 68 Volume of Lentils Import by Sudan (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	19,541	24,909	34,712	54,307	74,229	46,761	37,770	30,918	54,227	58,761
Nepal <sup>2</sup>	-	-	-	-	-	-	-	565	-	-

Source: <sup>1</sup> ITC trade map and FAOSTAT; <sup>2</sup> TEPC, Nepal

108. The average annual growth rate of import demand for lentils in Sudan based on its imports during past years (2001-11) is estimated to be 11.7 percent, and it is projected that the country will import about 79,876 MT of lentils from the world market in 2017 (Table 69).

**Table 69 Annual Growth Rate and Projections of Lentil Imports by Sudan**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
11.7	62,064	65,627	69,189	72,752	76,314	79,876

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

#### 2.4.5 Brazil

109. In 2011, Brazil imported 14,594 M T of lentils at an average CIF price of US\$ 1,013 per MT (Table 70). Brazil's import of lentils in that year came largely from Canada and Argentina together accounting for about 100 percent of the total imports (Table 70). The average CIF price per MT for supplies of lentils in 2011 from Canada and Argentina were US\$ 1,013 and 1,036, respectively.

**Table 70 Quantity and prices of lentil imports by Brazil from different markets in 2011**

Exporters	Imported quantity (MT)	Share in Brazil's imports (%)	CIF price (US\$/MT)
World	14,594	100.0	1,013
Canada	11,456	78.5	1,036
Argentina	3,111	21.3	923
Lebanon	20	0.1	1,250
France	6	0.0	3,167
Australia	1	0.0	2,000

Source: ITC Trade Map

110. During last 10 years, Brazil had total imports of lentils from the world market ranging from 6,879 M T (in 2002) to 14,594 M T (in 2011); and import of lentil from Nepal only once in 2009 of 48 MT (Table 71).

**Table 71 Volume of Lentils Import by Brazil (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	6,879	9,307	8,563	11,379	11,923	12,782	13,901	10,041	14,127	14,594
Nepal <sup>2</sup>	-	-	-	-	-	-	-	48	-	-

Source: <sup>1</sup> ITC trade map and FAOSTAT; <sup>2</sup> TEPC, Nepal

111. The average annual growth rate of import demand for lentils in Brazil based on its imports during past years (2001-11) is estimated to be 4.8 percent, and it is projected that the country will import about 17,122 MT of lentils from the world market in 2017 (Table 72).

**Table 72 Annual Growth Rate and Projections of Lentil Imports by Brazil**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
4.8	14,516	15,037	15,559	16,080	16,601	17,122

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

#### 2.4.6 United Kingdom

112. In 2011, UK imported 24,225 MT of lentils at an average CIF price of US\$ 1,250 per MT (Table 73). UK's import of lentils in that year came largely from Canada and Turkey together accounting for about 75 percent of the total imports (Table 73). The average CIF price per MT for supplies of lentils in 2011 from Canada and Turkey were US\$ 1,095 and 1,125, respectively.

**Table 73 Quantity and prices of lentil imports by UK from different markets in 2011**

Exporters	Imported quantity (MT)	Share in UK's imports (%)	CIF price (US\$/MT)
World	24,225	100.0	1,250
Canada	11,617	48.0	1,095
Turkey	6,477	26.7	1,125
France	590	2.4	3,244
India	962	4.0	1,805
UAE	1,069	4.4	1,231
Australia	936	3.9	1,101
Malawi	584	2.4	1,615
Sri Lanka	535	2.2	1,660
Nigeria	210	0.9	2,619
China	250	1.0	1,260
Myanmar	178	0.7	1,758
Netherlands	119	0.5	1,908
Malaysia	162	0.7	1,006
Tanzania	96	0.4	1,583
Sierra Leone	40	0.2	2,125
Bangladesh	18	0.1	3,778
Cameroon	119	0.5	538
USA	42	0.2	1,524
Thailand	18	0.1	3,278
Singapore	40	0.2	1,425
Lebanon	28	0.1	1,714
Spain	18	0.1	2,111
Uganda	13	0.1	2,923
Italy	7	0.0	4,429
Mauritius	8	0.0	3,750
Suriname	24	0.1	1,000
Poland	13	0.1	1,308
Denmark	5	0.0	3,000

Exporters	Imported quantity (MT)	Share in UK's imports (%)	CIF price (US\$/MT)
Ukraine	18	0.1	722

Source: ITC Trade Map

113. During last 10 years, UK had total imports of lentils from the world market ranging from 14,740 MT (in 2003) to 24,225 MT (in 2011); and import of lentil from Nepal were in the years 2008, 2009 and 2010, with maximum of 382 MT in 2010 (Table 74).

**Table 74 Volume of Lentils Import by UK (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	16,806	14,740	18,264	20,090	19,845	21,120	20,907	19,562	23,955	24,225
Nepal <sup>2</sup>	-	-	-	-	-	-	42	382	125	-

Source: <sup>1</sup> ITC trade map and FAOSTAT; <sup>2</sup> TEPC, Nepal

114. The average annual growth rate of import demand for lentils in UK based on its imports during past years (2001-11) is estimated to be 4.5 percent, and it is projected that the country will import about 29,016 MT of lentils from the world market in 2017 (Table 75).

**Table 75 Annual Growth Rate and Projections of Lentil Imports by UK**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
4.5	24,695	25,559	26,423	27,287	28,151	29,016

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

#### 2.4.7 Turkey

115. In 2011, Turkey imported 309,561 MT of lentils at an average CIF price of US\$ 664 per MT (Table 76). Turkey's import of lentils in that year came largely from Canada accounting for about 91 percent of the total imports (Table 76). The average CIF price per MT for supplies of lentils in 2011 from Canada was US\$ 659.

**Table 76 Quantity and prices of lentil imports by Turkey from different markets in 2011**

Exporters	Imported quantity (MT)	Share in Turkey's imports (%)	CIF price (US\$/MT)
World	309,561	100.0	664
Canada	282,361	91.2	659
Australia	14,903	4.8	637
USA	7,518	2.4	924
Russia	4,112	1.3	599
Ethiopia	322	0.1	848
Argentina	115	0.0	1,009

Yemen	100	0.0	990
Israel	107	0.0	804
UK	23	0.0	2,000

Source: ITC Trade Map

116. During last 10 years, Turkey had total imports of lentils from the world market ranging from 5,557 MT (in 2004) to 309,561 MT (in 2011); and import of lentil from Nepal only once in 2009 of 4,155 MT (Table 77).

**Table 77 Volume of Lentils Import by Turkey (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	22,668	16,909	5,557	64,281	69,071	30,979	191,683	141,541	210,289	309,561
Nepal <sup>2</sup>	-	-	-	-	-	-	-	4,155	-	-

Source: <sup>1</sup> ITC trade map and FAOSTAT; <sup>2</sup> TEPC, Nepal

117. The average annual growth rate of import demand for lentils in Turkey based on its imports during past years (2001-11) is estimated to be 24.9 percent, and it is projected that the country will import about 357,346 MT of lentils from the world market in 2017 (Table 78).

**Table 78 Annual Growth Rate and Projections of Lentil Imports by Turkey**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
24.9	242,900	265,789	288,678	311,568	334,457	357,346

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

#### 2.4.8 USA

118. In 2011, USA imported 23,951 MT of lentils at an average CIF price of US\$ 1,159 per MT (Table 79). USA's import of lentils in that year came largely from Canada, UAE, Turkey and India together accounting for about 88 percent of the total imports (Table 79). The average CIF price per MT for supplies of lentils in 2011 from the Canada, UAE, Turkey and India were US\$ 965, US\$ 1,640, 1,292 and 1,580, respectively.

**Table 79 Quantity and prices of lentil imports by USA from different markets in 2011**

Exporters	Imported quantity (MT)	Share in USA imports (%)	CIF price (US\$/MT)
World	23,951	100.0	1,159
Canada	15,780	65.9	965
UAE	1,606	6.7	1,640
Turkey	2,008	8.4	1,292
India	1,616	6.7	1,580
Thailand	774	3.2	1,596
Malaysia	817	3.4	1,501
Singapore	434	1.8	1,733

Australia	270	1.1	1,470
Mexico	185	0.8	1,416
China	130	0.5	1,762
France	108	0.5	2,093
Peru	128	0.5	1,563
Italy	15	0.1	3,733
Spain	13	0.1	3,769
United Kingdom	29	0.1	1,379
Malawi	22	0.1	1,227

Source: ITC Trade Map

119. During last 10 years, USA had total imports of lentils from the world market ranging from 10,861 MT (in 2002) to 24,094 MT (in 2008); and import of lentil from Nepal were in 2008, 2009 and 2011, with maximum of 1,625 MT in 2008 (Table 80).

**Table 80 Volume of Lentils Import by USA (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	10,861	13,196	16,104	13,678	17,522	15,087	24,094	20,516	16,531	23,951
Nepal <sup>2</sup>	288	-	-	-	-	-	360	1,603	1,625	-

Source: <sup>1</sup> ITC trade map and FAOSTAT; <sup>2</sup> TEPC, Nepal

120. The average annual growth rate of import demand for lentils in USA based on its imports during past years (2001-11) is estimated to be 7.7 percent, and it is projected that the country will import about 29,827 MT of lentils from the world market in 2017 (Table 81).

**Table 81 Annual Growth Rate and Projections of Lentil Imports by USA**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
7.7	23,756	24,971	26,185	27,399	28,613	29,827

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

#### 2.4.9 Germany

121. In 2011, Germany imported 26,265 MT of lentils at an average CIF price of US\$ 1,141 per MT (Table 82). Germany's import of lentils in that year came largely from USA, Turkey and Canada together accounting for about 88 percent of the total imports (Table 82). The average CIF price per MT for supplies of lentils in 2011 from USA, Turkey and Canada were US\$ 1,302, US\$ 896, US\$ 1,127.

**Table 82 Quantity and prices of lentil imports by Germany from different markets in 2011**

Exporters	Imported quantity (MT)	Share in Germany's imports (%)	CIF price (US\$/MT)
World	26,265	100.0	1,141
Turkey	7,677	29.2	1,302

USA	9,844	37.5	896
Canada	5,583	21.3	1,127
Netherlands	1,133	4.3	1,354
Italy	415	1.6	1,860
France	334	1.3	1,871
India	308	1.2	1,873
UK	200	0.8	1,390
Poland	119	0.5	2,134
China	176	0.7	989
Belgium	108	0.4	1,352
UAE	63	0.2	1,381
Spain	51	0.2	1,275
Ukraine	53	0.2	1,038
Lebanon	48	0.2	1,125
Austria	25	0.1	1,720
Greece	20	0.1	1,900
Syria	27	0.1	1,333
Singapore	24	0.1	1,333
Thailand	18	0.1	1,722
Kyrgyzstan	23	0.1	1,130
Russia	13	0.0	1,846
Iran	4	0.0	1,250
Switzerland	1	0.0	3,000

Source: ITC Trade Map

122. During last 10 years, Germany had total imports of lentils from the world market ranging from 18,854 M T (in 2003) to 35,366 MT (in 2005); and import of lentil from Nepal only once in 2009 of 72 MT (Table 83).

**Table 83 Volume of Lentils Import by Germany (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	21,237	21,190	23,530	20,549	28,398	23,579	21,890	18,854	28,670	26,265
Nepal <sup>2</sup>	-	-	-	-	-	-	72	120	-	-

Source: <sup>1</sup> ITC trade map and FAOSTAT; <sup>2</sup> TEPC, Nepal

123. The average annual growth rate of import demand for lentils in Germany based on its imports during past years (2001-11) is estimated to be 0.7 percent, and it is projected that the country will import about 25,860 MT of lentils from the world market in 2017 (Table 84).

**Table 84 Annual Growth Rate and Projections of Lentil Imports by Germany**

Growth Rate	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017

(% p.a.)						
0.7	24,873	25,071	25,268	25,466	25,663	25,860

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

#### 2.4.10 France

124. In 2011, France imported 27,802 M T of lentils at an average CIF price of US\$ 1,056 per MT (Table 85). France's import of lentils in that year came largely from China and Turkey, accounting for about 73 percent of the total imports (Table 85). The average CIF price per MT for supplies of lentils in 2011 from China and Turkey were US\$ 879 and 1,324, respectively.

**Table 85 Quantity and prices of lentil imports by France from different markets in 2011**

Exporters	Imported quantity (MT)	Share in France's imports (%)	CIF price (US\$/MT)
World	27,802	100.0	1,056
China	12,846	46.2	879
Canada	7,480	26.9	1,176
Turkey	1,706	6.1	1,324
Netherlands	1,651	5.9	1,083
Italy	1,365	4.9	1,041
USA	864	3.1	1,100
Australia	959	3.4	924
India	230	0.8	2,470
France	74	0.3	6,662
Spain	285	1.0	975
Germany	116	0.4	2,095
UK	65	0.2	2,062
Argentina	71	0.3	1,042
Bolivia	22	0.1	2,545
Belgium	16	0.1	2,375
UAE	23	0.1	1,348
Myanmar	16	0.1	1,125
Trinidad and Tobago	6	0.0	1,667
Lebanon	2	0.0	1,500
Malaysia	3	0.0	1,000
Madagascar	3	0.0	333

Source: ITC Trade Map

125. During last 10 years, France had total imports of lentils from the world market ranging from 26,588 M T (in 2004) to 31,811 MT (in 2003); and import of lentil from Nepal only twice in the years 2008 and 2009 (Table 86).

**Table 86 Volume of Lentils Import by France (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	31,297	31,811	26,588	32,655	31,944	28,812	31,009	25,365	29,742	27,802
Nepal <sup>2</sup>	-	-	-	-	-	-	42	65	-	-

Source: <sup>1</sup> ITC trade map and FAOSTAT; <sup>2</sup> TEPC, Nepal

126. The average annual growth rate of import demand for lentils in France based on its imports during past years (2001-11) is estimated to be -1.3 percent, and it is projected that the country will import about 25,767 MT of lentils from the world market in 2017 (Table 87).

**Table 87 Annual Growth Rate and Projections of Lentil Imports by France**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
-1.3	27,650	27,273	26,896	26,520	26,143	25,767

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

#### 2.4.11 Sierra Leone

127. In 2011, Sierra Leone imported 181 MT of lentils at an average CIF price of US\$ 630 per MT (Table 88). Sierra Leone's import of lentils in that year came largely from USA accounting for about 99 percent of the total imports (Table 88). The average CIF price per MT for supplies of lentils in 2011 from USA was US\$ 622.

**Table 88 Quantity and prices of lentil imports by Sierra Leone in 2011**

Exporters	Imported quantity (MT)	Share in Sierra Leone's imports (%)	CIF price (US\$/MT)
Total	181	100.0	630
USA	180	99.4	622
Lebanon	1	0.6	2,000

Source: ITC Trade Map

128. During last 10 years, Sierra Leone had total imports of lentils from the world market ranging from 48 MT (in 2003) to 35,366 MT (in 2005); and import of lentil from Nepal only once in 2009 of 72 MT (Table 89).

**Table 89 Volume of Lentils Import by Sierra Leone (in MT), 2002 – 2011**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World <sup>1</sup>	3,960	1,003	994	883	808	48	101	459	362	181
Nepal <sup>2</sup>	-	-	-	-	-	-	-	221	216	-

Source: <sup>1</sup> ITC trade map and FAOSTAT; <sup>2</sup> TEPC, Nepal

129. The average annual growth rate of import demand for lentils in Sierra Leone based on its imports during past years (2001-11) is estimated to be -34.6 percent (Table 90).

**Table 90 Annual Growth Rate and Projections of Lentil Imports by Sierra Leone**

Growth Rate (% p.a.)	Projections for next 5 years					
	2012	2013	2014	2015	2016	2017
-34.6	-	-	-	-	-	-

Source: Calculation based on ITC Trade Map data for the period 2001-2011.

## 2.5 QUALITY, FOOD SAFETY, AND SPS REQUIREMENTS

### 2.5.1 Grades and Quality Standards

130. In the world market Nepalese lentil is considered as a high quality product, and has a good image of “small in size, sweet in taste” pink lentil. Nepal exports whole and split lentil mostly in 50 kg bags with lining. Bangladesh demand is for whole lentil (*chanta*), and in most other markets the supply is of split lentil (*dal*). So far the quality of Nepalese lentil is considered superior to that from other leading export countries such as Canada, Australia, USA and Turkey.

131. In Bangladesh market Nepalese lentil is being preferred by the consumers, and commands a premium price. In December 2012, Nepalese lentil was sold for Tk 130 a kg whereas Canadian and Australian lentils were priced Tk 58-70 per kg. Although the Canadian and Australian lentils were cheaper than Nepalese lentil, consumers still prefer the latter (quoted in The Daily Star of Bangladesh in December 27, 2012; see APPENDIX 4).

132. The Nepal Bureau of Standard and Metrology (NBSM) has fixed the following standards for lentil in Nepal (Table 91). Based on the latter, the Department of Food Technology and Quality Control (DFTQC) provides quality and/or grade certification to whoever wishes to submit samples.

**Table 91 Lentil National Standards fixed by NBSM**

Quality Specification	Standard A	Standard B
1. Foreign materials not more than		
a. Inorganic (sand, soil, concrete)	0.5%	1%
b. Organic (straw & materials)	0.5%	1%
c. Other foreign materials that can be eaten	3%	4%
2. Damage by insects	1%	2%
3. Damage due to other causes	1%	2%
4. Unbroken seed with seed coat	2%	3%
5. Unripe and wrinkled seed	5%	8%
6. Seed broken in small particles	2%	6%

### 2.5.2 Food Safety and SPS Requirements

133. While exporting lentil, most of the importing countries require a phyto-sanitary certificate (PC). PC declares the consignment of outgoing items free from any quarantine

pest and conforming to the importing countries' phyto-sanitary requirements. In Nepal, Regional Plant Quarantine Offices nearby customs offices are providing this service to the exporters with nominal charges in a very short time. Till now, such certificates issued in Nepal are being accepted by the importing countries. But Nepal might face difficulty in the future in exporting those items to the western world unless Nepal conducts Pest Residue Analysis (PRA) and accredits its laboratories.

134. There are some food-related testing requirements in some of the importing countries. For example, Bangladesh requires test of fumigation of Methyl Bromide in exportable lentils; such tests are not required for exporting to India and other countries. However, this is not a barrier because the test conducted by the concerned Nepali authority is widely accepted by importing countries. In the case of the treatment of radiation, India does not accept Nepal's certificate and therefore exporters need to go certified laboratories in Kolkata, Sunauli or Luknow for the test. This is a time-consuming process.

135. Department of Food Technology and Quality Control (DFTQC) is the authorized body in the area of food standards and safety. The food standards of Nepal fixed by DFTQC are closer to that of India, Pakistan and Bangladesh (Karki, et al). The food quality standards for unhusked and dehusked lentils are provided in Table 92 and Table 93, respectively. Similarly, the maximum pesticide residue limits (MRLs) fixed by DFTQC in food items, including lentil are provided in Table 94.

136. Pesticides residue limits are very important for enhancing export potentials of food products, as Nepal already has some negative experiences on this account, particularly in the case of tea exports. There is an urgent need for a national monitoring program for periodic assessment of their level of occurrences. The DFTQC in Nepal has fixed pesticide residue limits for lentil.

137. All parameters are covered except that Nepal standard is stricter in damaged grains (3%) and aflatoxin (20 ppb), compared with 5% and 30 ppb in Indian standard, respectively. The Codex standard provisions additional parameters such as broken seeds of different colors and discolored seeds. Nepalese standards for MRLs are also stricter to that specified by *Codex Alimentarius* (MRLs for DELTAMETHRIN is 1 mg/kg by Codex standard whereas the same is 0.5 mg/kg by DFTQC standard).

**Table 92 Quality Standard of Lentil Grain (whole unhusked) fixed by DFTQC**

Quality Specification	Standard
1. Moisture	Not exceeding 14%
2. Foreign matter	
a. Organic matter	Not exceeding 1.5%
b. Inorganic matter	Not exceeding 1.0%
3. Other edible grains	No exceeding 3.0%
4. Damaged grains	Not exceeding 3.0%
5. Weevilled grains	Not exceeding 3.0%
6. Uric acid	Not exceeding 100 mg per kg
7. Microtoxin including aflatoxin	Not exceeding 20 microgram per kg

Source: Department of Food Technology and Quality Control, 2012. *Minimum Quality Standards of Foods*

**Table 93 Quality Standard of Lentil Pulse (dehusked) fixed by DFTQC**

Quality Specification	Standard
1. Moisture	Not exceeding 14%
2. Foreign matter	
a. Organic matter	Not exceeding 1.0%
b. Inorganic matter	Not exceeding 1.0%
3. Other edible grain	Not exceeding 2.0%
4. Damaged grains	Not exceeding 3.0%
5. Weevilled grains	Not exceeding 2.0%
6. Uric acid	Not exceeding 100 mg per kg
7. Microtoxin including aflatoxin	Not exceeding 20 microgram per kg

Source: Department of Food Technology and Quality Control, 2012. *Minimum Quality Standards of Foods*

**Table 94 Pesticide maximum residue limits (MRLs), ext raneous residue limits i n G rains (including lentils) fixed by DFTQC**

	Pesticides	MRL value
1	Aldrin, Dieldrin	0.01 mg/kg
2	Carbaryl	1.5 mg/kg
3	Chlordane	0.02 mg/kg
4	D.D.T.	Nil
5	Diazinon	0.05 mg/kg
6	Dichlorvos	1.0 mg/kg
7	Hydrogen Cyanide	37.05 mg/kg
8	Fenitrothion	0.02 mg/kg
9	Heptachlor % its epoxide expressed as Heptachlor	0.01 mg/kg
10	Hydrogen Phosphide	0.02 mg/kg
11	Inorganic Bromide	25.0 mg/kg
12	Lindane	0.01 mg/kg
13	Malathion	4.0 mg/kg
14	Phosphamindon	0.05 mg/kg
15	2,4D	0.01 mg/kg
16	Carbofuran	0.01 mg/kg
17	Fenthion	0.1 mg/kg
18	Dithiocarbamates	0.2 mg/kg
19	Phenthoate	0.05 mg/kg
20	Phorate	0.05 mg/kg
21	Carbendazim	0.5 mg/kg
22	Trichlorfon	0.05 mg/kg
23	Oxydemeton methyl	0.02 mg/kg
24	Decamethrin/Deltamethrin	0.5 mg/kg
25	Paraquat Dichloride	0.025 mg/kg
26	Monocrothphos	0.025 mg/kg
27	Chlorpyrifos	0.05 mg/kg
28	Pyrethrins	Nil
29	Chlorfenvinphos	0.025 mg/kg

Source: Department of Food Technology and Quality Control, 2012. *Minimum Quality Standards of Foods*

138. There are no specific MRL glyphosate requirements for lentil in Nepal. In the EU effective June 14, 2012, the European Union (EU) has revised its maximum residue limit (MRL) for glyphosate in lentil to 10 parts per million (PPM), welcome news for Canadian lentils growers who plan to use glyphosate as a pre-harvest treatment this growing season. (As a reference, the United States' MRL for glyphosate in lentil is 8 PPM.).

## 2.6 SWOT ANALYSIS AND MARKETING STRATEGY

139. Nepal ranks among the ten world's major producers and exporting countries for lentils. The grain size of Nepali lentil is small, and has the reputation of being 'small, pinky, and tastier' lentil in the international market, and highly appreciated in South Asia and the Middle East, compared with larger lentils or other color/quality. Export volume can be increased substantially through price competitiveness. A analysis of strengths, weaknesses, opportunities and constraints facing the Nepalese lentil that have implications for marketing strategy for export promotion are presented in Table 95.

**Table 95 SWOT Analysis of Nepalese Lentil's Export Market**

<b>Strengths</b>	<b>Weakness</b>
<ul style="list-style-type: none"> <li>- High quality product. Nepalese lentil has the reputation of being "small, very pinky, and tastier" in the international market, and highly appreciated in South Asia and the Middle East.</li> <li>- Nepalese lentil gets premium price for its quality and taste.</li> <li>- Fifth largest lentil producer globally. National production of about 200,000 MT; 95% production concentration in 20 Terai districts with relatively better transport access.</li> <li>- Grown profitably even in rainfed rice fallow lands with the existing soil moisture, thus saving on additional fertilizer, irrigation, and tillage.</li> <li>- Use of modern processing technology (color sensing, de-stoner) and long experience in exporting. About 30 pulse mills with installed capacity to process and export as much as 60,000 MT of lentil.</li> <li>- The industry is organized along a millers' association (ANROPI) with membership of about 18 large pulse mills belonging to 6-7 major industrial houses in the country.</li> </ul>	<ul style="list-style-type: none"> <li>- Production of lentil in the country is not good at responding to increased market demand (export and domestic consumption) for the product, and the deficit has to be met through imports from India (even with their export ban) and other countries (Canada and Australia).</li> <li>- Production of lentil is constrained by lack of timely and adequate supply of improved variety seeds, pests and diseases, and drought in the absence of irrigation facilities.</li> <li>- Higher profitability of sugarcane, wheat, and other cash crops competing for land use means lentil cultivation is mainly in rainfed and poor quality land, thus lower yield.</li> <li>- The costs of electricity and transportation are high. Electricity supply is unreliable and mills have to install their own generators. Local tax collection in several places adds to cost of trade. Although the government abolished collection of local taxes on the highways, this is still continuing and is a non-tax barrier for promotion of export of lentil. Similarly, Nepal Transport and Warehousing Corporation (NTWC) charges 0.4% on all export without providing any service.</li> <li>- Containers for shipment are not easily available and are costly. Besides, port facilities in Kolkata for exporting lentil to overseas countries (Sri Lanka, UAE, Malaysia, etc) are poor. Alternate port is not available to the country.</li> <li>- Bangladesh is an excellent market for export of Nepalese lentil. However, there is a critical need for direct market facilitation in this country for sorting out the issues of Letter of Credit, local banks, indenting agents, etc.</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>- Indian ban on its export of pulses, including lentil has made Bangladesh to depend on import of lentil from Nepal as the sole supplier of small grain red lentil.</li> </ul>	<ul style="list-style-type: none"> <li>- Canada, Australia and USA production and policies are targeting the South Asian and Middle East markets with increased supply of red lentils at cheaper prices.</li> </ul>

<ul style="list-style-type: none"> <li>- Average national yield (1 MT/ha) is close to world's average even with low input technology; with use of improved varieties (Khajura 1, Khajura 2, Simal, Sikhar, Shital and ILL7723) and improved crop management practices (priming of seeds<sup>2</sup>, insect pest management, irrigation at critical stages, weed and nutrient management), the farmers can increase the yield to 1.5 MT/ha.</li> <li>- Opportunity of value addition at farm's level through cleaning and grading.</li> <li>- Growing world demand for lentil. Increasing demand for Nepalese lentil in Bangladesh, and other new markets like UAE, Malaysia, Sudan, etc. Pakistan could become new neighboring market.</li> <li>- Provision of export incentives (up to 4% of export value) from the government for processor/exporter.</li> </ul>	<ul style="list-style-type: none"> <li>- Lentil is a food item and thus it carries the risk of being a restricted item for export, depending upon the food situation in the country. Export was banned for more than six months during 2009.</li> <li>- Sharply increasing domestic market price for lentil draining the exportable quantity.</li> <li>- Codex Alimentarius, SPS standards fulfillment is becoming stringent in all WTO member developing countries.</li> <li>- In order to meet growing quality certification needs, the exporters may well have to find their way through a dhoc bodies in India, as soon as MRL standard requirements will be enforced in the destination markets.</li> </ul>
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Source: Literature review, and interactions with millers/exporters during the field Survey.

## 2.7 BANGLADESH MARKET

### 2.7.1 Bangladesh Market for Nepalese Lentil

140. Bangladesh is the main export destination for Nepalese lentil. This opportunity is created by the India export ban of pulses (including lentil); before the ban in 2007 India used to be the major supplier of lentil to Bangladesh. Until the Indian ban for lentil remains, Nepal's geographic proximity and road connection means this will remain the major destination for lentil export from Nepal. With India banning its export, Nepal is also the best choice for Bangladesh for meeting its increasing import needs. However, Nepalese exporters are unable to meet the demand due to supply constraint.

141. Nepalese small grain red lentil is very much liked in Bangladesh for its taste, and commands premium price over other leading export countries (Australia, Canada and USA). However, higher pricing of Nepalese lentil has caused reduction in import demand from Bangladesh. Earlier Nepalese lentil was traded in most of the Bangladeshi cities (Dhaka, Khulna, Chittagong, Bogra, etc), but now its market presence is found mainly in Dhaka. If Nepal cannot price competitive in the future, it is likely that Canada, Australia and Turkey will increase their market share at the cost of Nepal's export.

142. Meeting certification requirements for exports to Bangladesh is not a major problem. Exports to Bangladesh are of only super fine quality. The exporters use the service of Kolkata based surveyor companies at nominal service charge for independent certification of quality, quantity and weight for every consignment.

<sup>2</sup> *Priming* in agriculture is a form of seed planting preparation in which the seeds are pre-soaked before planting. In most cases primed seed have shown an overall advantage over seeds that are not primed. Many have shown a faster emergence time (the time it takes for seeds to rise above the surface of the soil), a higher emergence rate (the number of seeds that make it to the surface), and better growth, suggesting that the head-start helps them get a good root system down early and grow faster. This method can be useful to farmers because it saves them the money and time spent for fertilizers, re-seeding, and weak plants.

143. Costs involved in delivery of lentil to Bangladesh: Truck transportation cost: Mill gate in Nepal to Banglaband (India-Bangladesh transit point) Rs 300 per quintal; the truck reaches Banglaband the other day. Additional cost of Rs 5-7 thousands per truck; this amount is given to the driver to pay for taxes, etc. Export tax of Rs 1 per kg and overheads of Rs 1 per kg. From Banglaband the Bangladeshi importer collects the delivery and transports to their warehouse.

144. The main problem perceived by Nepali exporters with Bangladesh is related to payment, in particular related to the capacity of the Bangladeshi banking system to guarantee risk free and timely payment for the delivered consignment. In the view of Nepali exporters, Bangladeshi commercial banks are creating problem in timely payment of the exports, and sometimes the exporter has to face risk of not getting payment (see some cases as reported in the media see APPENDIX 4). This restricts the exporters to deal with only known and reputed importing parties. There is no service such as on-arrival visa in Bangladesh. If this facility were made available, the exporters could send their staff members to follow delivery of the product to the importing party and process the payment.

145. Although Bangladeshi importers are blamed most of the time for any payment problem, sometimes the fault is also on the part of the Nepalese exporters. During one meeting of traders of both countries, the Bangladeshi importers had raised their problem with Nepalese exporters in delivering sub-standard or poor quality product. This could be addressed through quality certification by third parties, i.e. a SGS surveyor.

146. Bangladesh will remain the main export market until there is Indian export ban. Nepalese lentil taste is preferred to lentil from other leading exporting countries (Canada, USA, Australia, and Turkey) and commands premium price. There is easy road access for supply to Bangladesh, and Nepal has advantage both in quality and in transportation cost.

### 2.7.2 *Decrease in Price of Nepali Lentil Exported to Bangladesh*

147. In 2011, there was a decrease in price of lentil exported from Nepal to Bangladesh and also at the same time a decrease in volume of export of the product to that market (Table 96). The traders met during the field visit were of the view that the decrease in price was caused by general decrease in lentil price in the world market. This is substantiated by comparison of import price of lentils for Bangladesh during 2009-2011; decrease in average import price for Bangladesh from US\$ 926 per MT in 2010 to US\$ 811 per MT in 2011, and a similar decrease in import price for supplies from Nepal from US\$ 1,390 per MT in 2010 to US\$ 1,084 per MT in 2011 (Table 96). In the year 2011, the export prices of lentils for all leading exporting countries had also decreased, with exception of USA (Table 97).

**Table 96 Bangladesh Import of Lentils and Average CIF Prices, 2009 to 2011**

	Total Imports from all Countries		Imports from Nepal	
	Quantity (MT)	CIF Unit Value (US\$/MT)	Quantity (MT)	CIF Unit Value (US\$/MT)
2009	177,673	875	34,801	1,266
2010	152,230	929	30,625	1,390
2011	74,704	811	22,001	1,084

Source: ITC Trade Map

**Table 97 Average FOB Prices of Lentil Exports by Countries in 2009 to 2011**

	2009	2010	2011
World	834	867	788
Canada	740	829	760
USA	694	711	712
Australia	897	793	677
Turkey	1,346	1,113	945
Nepal	1,288	1,364	1,078

Source: ITC Trade Map.

### 2.7.3 Increasing the Quantity and/or Price of Lentil Sold to Bangladesh

148. The Bangladesh market is considered by Nepalese traders as very reliable market for lentil export. Nepal is unable to meet lentil demand from Bangladesh due to supply constraint. However, in recent years Australia and Canada are targeting Bangladesh market for red lentil, and Nepal need to be competitive in price, even though its own product is considered superior in quality.

149. Banking facility in Bangladesh for Nepalese export is very poor and complicated. As in the case of Canadian or Australian exporters, Nepalese exporters can not get payment directly through the commercial bank, and payments have to be channeled through the Central Banks of Bangladesh and Nepal, thus lengthening the payment process. For this reason, even if some buyers offer attractive price, the Nepalese exporters have to deal with only known and trusted importers to avoid risk in payment. The ANROPI needs to address the problem related to timely payment of the exports, and also assuring that only quality product are exported. Strong governmental support through an adequate enabling environment is required in this area.

### 2.7.4 Recent Disruptions in the Export of Lentils to Bangladesh

150. In May-June 2013, the export market of lentils from Nepal to Bangladesh was again disrupted. News in the media (see APPENDIX 4) announced that lentils exports had come to nil. Informants from Bangladesh indicated that prices of Nepal lentils was becoming too expensive (over \$1,500/MT) and many importers had started to shift to either cheaper lentil types (such as those originating from Australia, Canada, and US) or from India (where there is a ban on export of lentils, but some illegal export is occurring). As of the writing of this report (1 July 2013) the situation has improved. Prices have gone down to \$1,350/MT as a consequence of a lower demand in Bangladesh because of a bumper crop. The situation might gain be fluctuating as the Ramadan period is impending and as normal during this month, food prices might increase. Enquiry with leading exporters in this regard revealed that due to bumper harvest of lentil in Bangladesh this year the local market is flooded with local lentils (that compete with Nepalese red lentil), and that the importers are not placing any order for Nepalese lentils for now. The Nepalese exporters quoted FOB (Banglabandh) price of super fine red lentil for Bangladesh market for 3 July 2013 is US\$ 1,450 per MT.

## 2.8 PROMISING NEW EXPORT DESTINATIONS

151. Australia, Canada and the USA are increasingly exporting lentil to developing countries. Australia and Canada have entered the Bangladesh market, competing with Nepal and Turkey. In this context, there is an urgent need to consolidate the existing

Nepalese export markets, and diversify exports destinations towards countries where the small pink and sweet-in-taste Nepalese lentil could have increasing demand. It is to be noted that whole grain (chanta) is demanded only in Bangladesh, and in other countries the demand is for split grains (dal).

152. The following sections assess the potential promising export destinations for Nepalese lentil, other than Bangladesh. A short list of such potential export markets was identified based on review of their import volume, prices and growth projection. These are: India, Sri Lanka and Pakistan from South Asia, UAE and Saudi Arabia from Middle East, Malaysia and Singapore from South Asia, and USA, UK, Turkey and Sudan from outside Asia. Table 98 summarizes the situation of major current and potential markets for Nepalese lentil. Assessment of the potential export destinations are made based on their trade statistics and the feedback from traders/exporters received during the field survey meetings.

### **2.8.1 Potential Export - India**

153. Nepalese and Indian lentils are of the same color, but the size of grain in India is same only in case of production from border areas of Bihar and Uttar Pradesh (UP). For example, lentil production of Kanpur (UP) and Madhya Pradesh are larger in size as compared to the same from Nepal and bordering areas in India. Grain size of Indian lentil is relatively large (MP, southern Bihar and UP). Only lentil productions in the adjoining border areas are similar to Nepalese lentil. Previously, Nepalese lentil used to be channeled to the international market via Indian export.

154. Indian market is not preferred for export as prices in production areas in India and Nepal move very closely (price of lentil in Baharaich mandi in UP and in Nepalgunj are almost same), and that there is no export incentive for export to Indian side. Bengal and Assam in India also have good demand for Nepalese lentil; but in these markets it is difficult to compete with supplies from Indian lentil producing states (UP and Bihar) which also process imported lentils. Therefore, exports are diverted to Indian markets only when these could not be supplied to Bangladesh for some reason.

**Table 98 Major Potential Markets for Export of Nepalese Lentil**

	South Asia				Middle East		East Asia		Others			
	Bangladesh	India	Sri Lanka	Pakistan	UAE	Saudi Arabia	Malaysia	Singapore	USA	UK	Turkey	Sudan
Total import of lentil in 2011 (MT)	74,704	102,365	131,339	98,433	138,241	26,387	5,242	3,636	23,951	24,225	309,561	58,761
Growth rate of imports (% p.a.)	4.4	13.1	4.4	12.2	20.8	3.6	31.2	18.1	7.7	4.5	24.9	11.7
Imports from Nepal, av. of 2009-11 ( MT)	34,127	461	977	-	1,506	301	373	728	1,076	169	1,385	188
Major three suppliers in 2011	Australia, Nepal, Canada	Canada, USA, Australia	Australia, Canada, UAE	Canada, Australia, USA	Canada, Australia, USA	Turkey, Canada, Sri Lanka	Turkey, Canada, Sri Lanka	Myanmar, Thailand, Mozambique	Canada, UAE, Turkey	Canada, Turkey, France	Canada, Australia, USA	Turkey, USA, Egypt

Source: Computed by Author based on ITC Trade Map data.



### *2.8.2 Potential Export - Sri Lanka*

155. Sri Lanka is another South-Asian market for Nepalese lentil export. As much as 98 percent of Sri Lankan lentil imports are of the red type. Quality of Nepalese lentil is considered good as compared to other major exporters. But, exporting to Sri Lanka involves extra cost of transportation (Kolkata – Sri Lanka) of US\$ 70 per MT (Rs 6,000 per MT) on the top of road transportation to Kolkata of Rs 4,000 per MT. Besides, Sri Lanka demand is for large grains and sourced mainly from Australia and Canada. These countries recently focus on increasing production of red lentil and targeting South Asian market. That implies increasing pressure on Nepal's export to Sri Lanka to be priced competitively with supplies from Australia and Canada.

### *2.8.3 Potential Export - Pakistan*

156. Pakistan is the other South-Asian country importing red lentil from the world market. Although Nepal's lentil production is concentrated in the western Terai which is not very far from Pakistan, export from Nepal has to be routed from Kolkata which is on the far-east. However, if Nepal could get transit access by road up to Waga border point as it has got the facility in case of Bangladesh, then Pakistan would emerge as a profitable destination for Nepalese export of lentil and other agriculture and NTFP products. Unless road transit route to Pakistan could be accessed by Nepal it is really difficult for Nepal to compete with other exporting countries in the supply of lentil to that country.

### *2.8.4 Potential Export - Middle East*

157. Middle-East countries are also attractive market for Nepalese lentils as they have preference for Nepalese red lentil. Dubai in UAE is the trade hub for channeling supplies to the Middle-East countries.

158. The UAE is one of the major importers of lentils from the world market (138,241 MT lentil imported in 2011), has very high annual growth rate in imports (21 percent), and Nepal has been exporting lentils to this country regularly since 2008 (exported 3,769 MT in 2009), and the traders have assessed this as the most potential export destination for Nepalese lentil after Bangladesh.

159. However, Canada, Australia and USA are already the major supplier of lentils to this market (Table 16), and that Nepal will have to look for a niche market for its premium quality product of small grain red lentil.

### *2.8.5 Potential Export – Saudi Arabia*

160. Saudi Arabia imported 26,387 Mt of lentils in 2011; 95 percent of this from Turkey and Canada alone (Table 25). Nepal had export of lentil to this country in 2009 (807 Mt) and 2010 (96 MT) (Table 1). With increasing immigrant workers from the South Asian countries, the demand for Nepalese lentil in this market is expected to rise. However, given Nepalese lentil being costly its demand is likely to be in small quantity, and that the traders view export to Saudi Arabia may well be channeled through trading agents in Dubai.

### *2.8.6 Potential Export – Malaysia*

161. Malaysia imported 5,242 MT of lentils in 2011; about 81 percent of this was from Turkey and Canada (Table 49). Nepal had exported lentil to this country in 2008 (88 Mt), 2009 (190 Mt) and 2010 (930 MT); but there were no exports of lentil in the years 2011 and 2012 (Table 1). High annual growth rate of 31 percent in lentil import (Table 50), and the increasing trend in export volumes from Nepal during 2008-10 indicate there could be good prospect for export of Nepalese lentil in Malaysia in the future as well. The traders interviewed were also optimistic on prospect of exporting small quantity of lentil to this market.

#### *2.8.7 Potential Export - Singapore*

162. Singapore imported 3,636 MT of lentils in 2011; about 45 percent of this from Myanmar and Thailand (Table 46). Besides Bangladesh and India this the country having continuous lentil exports since 2008, ranging highest of 1,619 MT in 2009 and this was 300 MT in 2012 (Table 1). Average annual growth rate in import of lentil from Singapore was 18 percent (Table 48). This market demands lentil in small pack of 5 kg ready for sale in retail stores. Besides having demand of Nepalese lentil for the local market, this is an important trade hub in Asia for channeling exports in the world market through trading houses. The traders interviewed were of the opinion that Singapore is a reliable market for export of Nepalese lentil, but the demand as of now is for only small volume and in small pack of 5 kg ready for retail sale.

#### *2.8.8 Potential Export – USA*

163. USA imported 23,951 MT of lentils in 2011; about 66 percent of this from Canada alone (Table 79). Nepal had exported lentil to this country in 2008 (360 MT), 2009 (1,603) and 2010 (1,627); but since then there were no exports of the grain in 2011 and 2012 (Table 1). Besides, price competitiveness, meeting quality certification requirements is reported by the traders as major constraint in promoting export of lentil and other agriculture products to this country. However, once the country has in place monitoring of pesticide residue and has required quality certification institutions and infrastructure, USA could be an attractive market destination for export of limited quantity of specialty lentil.

#### *2.8.9 Potential Export – UK*

164. United Kingdom (UK) imported 24,225 MT of lentils in 2011; about 75 percent of this from Canada and Turkey alone (Table 73). Nepal had exported lentil to this country in 2008 (42 MT), 2009 (382) and 2010 (125); but since then there were no exports of the grain in 2011 and 2012 (Table 1). Besides, price competitiveness, meeting quality certification requirements is reported by the traders as major constraint in promoting export of lentil and other agriculture products to this country. However, like in the case of USA once the country has in place monitoring of pesticide residue and has required quality certification institutions and infrastructure, this country could also be an attractive market destination for export of limited quantity of specialty lentil.

#### *2.8.10 Potential Export – Turkey*

165. Turkey imported 309,561 MT of lentils in 2011; more than 90 percent of this from Canada alone (Table 76). So far Nepal has exported lentil to this country only in 2009 of 4,155 MT (Table 1). A major exporting country for lentil in itself, the imports is targeted to

meet the deficit in production. Turkey is also major lentil consuming country in the world. Any shortfall in its production has to be compensated with increased imports, and this provides opportunities for export from countries like Nepal. The traders do not consider this country as a reliable export destination for Nepal's premium quality lentil.

#### *2.8.11 Potential Export – Sudan*

166. Sudan imported 58,761 MT of lentils in 2011; about 93 percent of this from Turkey and USA alone (Table 67). So far Nepal has exported lentil to this country only once of 565 MT in 2009 (Table 1). The traders do not consider this country as a reliable export destination for Nepal's premium quality lentil.

#### *2.8.12 Potential Export Markets other than Bangladesh*

167. Based on the assessment of the potential export markets for Nepalese lentil, the most potential export markets for Nepalese lentil, other than Bangladesh, are suggested as UAE, Sri Lanka, Malaysia and Singapore. As these markets demand mainly split lentil, it will be possible for Nepalese exporters to be competitive in quality and price. Millers in Nepalgunj and Birgunj indicated that split lentil (dal) is priced 15-20 percent lower than whole lentil (chanta). Dubai in UAE and Singapore being major trading hubs in international trade these two destinations could be utilized for channeling export of Nepalese lentil to other nearby countries through the trading agents.

168. Besides, in the future when the country has in place monitoring of pesticide residue and has the institutional and infrastructural facilities well in place for assured SPS and quality control as required by the USA and European Union nations, USA and UK could be another potential export destinations for specialty quality lentils.

## 3 NEPAL LENTIL EXPORT INDUSTRY

### 3.1 THE CURRENT SITUATION

#### 3.1.1 Domestic Production of Lentil

169. Production of lentil in the country in 2011 was estimated at 206.9 thousand MT from 207.6 thousand hectare, with yield of 0.997 MT/ha (Table 99). Production of lentil over the years is found to be almost stagnant at around 179 to 187 thousand tonnes during 2001-2010, and increased to 208 thousand tones only in 2011, and that the average annual growth rate in production is found to be 0.77 percent. The yield rate of lentil production in the country is slightly higher than the same in the neighboring Indian states of UP (0.823 MT/ha) and Bihar (0.791 MT/ha)<sup>3</sup>.

170. Lentil in Nepal is mainly grown in the lowland terai districts; the 20 terai districts accounting for more than 95 percent of production and area of lentil crop (see APPENDIX 5).

**Table 99 Production, Area and Yield of Lentil in Nepal, 2001-11**

Year	Production ('000 MT)	Area ('000 ha)	Yield (MT/ha)
2001	143.1	178.7	0.801
2002	148.4	180.2	0.823
2003	150.0	183.3	0.818
2004	158.7	187.4	0.847
2005	160.7	188.9	0.851
2006	158.0	183.2	0.862
2007	164.7	189.2	0.871
2008	161.1	189.5	0.850
2009	147.7	183.8	0.804
2010	151.8	187.4	0.810
2011	206.9	207.6	0.997
Growth Rate % (2001-11)	0.77	0.37	0.40

Source: Statistical Information on Nepalese Agriculture, 2010/11, MOAD statistics.

171. High scope to increase productivity: Productivity can be increased by introducing high yielding seed varieties and improved cultivation practices like the use of quality seeds, weeding, applying nutrient management, and disease management. Yield potential of the improved variety lentils being released by NARC is reported to be 1.5-2 MT/ha (discussion with NARC Khajura officials).

172. Khajura -1, Khajura -2 and Simal varieties are in use in Nepalgunj and nearby districts for more than 10 years, and purity of this variety has gone to a very low level. Price of improved seed in the market is considered to be high (Rs 100-120 per kg), and about 60-70 percent farmers' use their own production or production of neighbours as seed. Farmers also get seed from Indian market; the popular Indian varieties are PL 406 and PL 639. These are very similar to Khajura -1 and Khajura -2. Sikhar and Simal varieties are in use in Birgunj and nearby districts for over 10 years; purity of seed is not maintained. Wilt problem affects the crop production and productivity.

<sup>3</sup> Yield rate for UP and Bihar of India for the year 2005, from Reddy and Reddy, 2010.

173. Seed supply chain is not working well. Seed production chain is very short: foundation seed is used for production of improved seed to be sold as seed to the farmers. It should have been: foundation seed for production of Certified 1 seed which to be used for production of Certified 2 seed; and production from Certified 2 should have been used for production of improved seed to be finally sold as seed to the farmers.

174. Assuming seed rate of 40 kg per ha, and net seed grade production of 600 kg per ha, 40 kg foundation seed is now producing only 600 kg of improved seed good enough for only 15 ha land. Whereas, if proper seed production chain were followed (FS-C1-C2-Improved seed) then the same 40 kg of foundation seed should have produced 135,000 kg of improved seed good enough for 3,375 ha, i.e. 225 times more coverage by improved seeds. This is the reason for limited availability of improved seed of lentil, higher pricing, and ultimately lower coverage by improved seeds at the farmers' field.

175. The adoption of improved crop management practices at farmers' level is very low. Increasing yield of the crop would require the following: (i) Increasing seed replacement rate, and use of improved seed; (ii) Seed treatment with Rhizobium culture; (iii) Promoting mono-crop instead of relay cropping with paddy, and (iv) Use of light irrigation before flowering, basal dose of fertilizer, and use of insecticide to control wilt problem.

176. The seeds coming from India are only improved seeds but used here as foundation seed for production of improved seeds by seed producer farmers. The DADO has budget constraint for providing extension support for lentil crop. The budget with DADOs for program cost is very low, and their focus is on major food crops like paddy and wheat.

177. Farmers know the need of seed replacement after 3-4 years, and about 30-40% farmers practice this. The sources of improved seeds are: Agrovet 25%, Farmer Groups 20%, Farmer to farmer exchange 15%, Own seed 40%. Sources of foundation seeds are NARC (Khajura, Parwanipur and Chitwan) 80%, and Seed Company, Hetauda 20%. The varieties in use are Khajura 2, Khajura 2, Simal and Sikhar 75%, and Seed from nearby Indian side 25%. Local seeds are almost not in use.

178. Farmers' prices of seed purchase were Rs 80 to Rs 120 per kg; and grains were sold for Rs 55 to 65 per kg. The marketing channels for sale of lentil grain are (i) Village trader 80%, Galla at market centers 20%. The main trading season for farmers' sale of lentil harvest is April-May (Baisakh-Jestha).

179. Land types in the area are: irrigated/ partially irrigated 26%; and rainfed 74%. Cropping patterns in rainfed land are: (i) Rice – wheat, (ii) Rice – lentil/other legumes, and (iii) Rice – vegetables.

180. Crop rotation is needed to improve soil fertility. Lentil cultivation is usually in marginal land. Preference is for wheat or vegetables as winter crops in more productive land. Farmers do not consider lentil as profitable crop; productivity is very low (maximum 1 MT/ha) against potential of 2 MT/ha.

181. If lentil production has to increase there should be adequate incentive for farmers to put more productive land in lentil cultivation. Only incentive to farmers can encourage them to use more of fertile land, good seed, fertilizer, other inputs and improved farming practices.

### 3.1.2 Cost of Production in neighboring Indian States

182. Field work conducted during the assessment of market for lentils indicated that farmers switch to wheat as soon as they have irrigation. In order to explore this issue one would need to conduct a survey of farming practices and cost of productions and compared to returns. This analysis could not be conducted within the scope of work of this assignment, and the consulted literature does not address this issue for Nepal.

183. One possible reason for switching to wheat from lentil when there is irrigation is that lentil cannot tolerate water logging even for short time. Another reason is that profitability of irrigated wheat may be higher than lentil.

184. Even though information on Nepal could not be found, there is relevant information for neighboring states of India (see Reddy and Reddy 2010). The relevant information is summarized in this section.

185. Lentil is a rabi crop (grown in the winter dry season); wheat is its main competing crop. Cost per hectare has been found lower for lentil compared to wheat, which indicates that the crop is more suitable for the resource poor regions and farmers.

186. Compared to wheat, lentil was found to have higher profitability in Bihar but to have negative net revenue and lower profitability than wheat in UP (Table 100).

**Table 100 Relative Profitability of lentil vis-à-vis Competing Crop Wheat, 2001-03**

	Lentil		Wheat	
	Bihar	UP	Bihar	UP
Cost (IRs)/ha	9,501	10,180	14,574	17,160
Yield (kg/ha)	935	735	2,669	3,659
Gross revenue (IRs/ha)	11,903	9,357	16,468	22,576
Net Revenue (IRs/ha)	2,402	-823	1,894	5,416

Source: Reddy and Reddy (2010).

187. After noticing large yield gaps between on-farm demonstration and farmers-realized yield, yield gap and cost benefit analysis was carried out for each recommended practice and results were compared with farmers' practices (Table 101). The study used the data of a field survey which was conducted in the Vidhokar village of Fatehpur district in Uttar Pradesh for the year 2005 under the project "Measurement of Externalities of Pulse Crops in Cropping Systems". A total of 120 farmers were selected, 60 were under the on-farm demonstrations and 60 were not under demonstrations.

188. The response to disease management was higher in both increases in yield (46%) and net return (82%), followed by improved variety with increase in yield by 25% and net returns by 49%. For the package as a whole, the yield increased by 59% and net returns by about 88% with additional cost of just IRs 3,689.

**Table 101 Yield gap under different management practices between improved practice and farmers' practice in lentil cultivation, 2005**

	Yield (kg/ha)			Incremental costs (IRs/ha)	Net Returns (IRs/ha)		
	Farmers' practice	Improved practice	Yield gap (%)		Farmers' practice	Improved practice	Net returns gap (%)
Variety	981	1,224	24.8	750	7,195	10,741	49.3
Weed management	1,100	1,363	23.9	560	11,172	13,047	16.8
Fertilizer management	1,310	1,553	18.5	475	9,380	12,000	27.9
Rhizobium management	1,236	1,459	18.0	574	11,560	14,540	25.8
Irrigation management	1,024	1,227	19.8	600	7,892	10,332	30.9
Disease management	780	1,138	45.9	600	7,415	13,490	81.9
Package technology	1,037	1,656	59.7	3,689	8,794	16,500	87.6

Notes:

Variety – Improved practice (IP): Improved variety; Farmers' Practices (FP)

Weed management – IP: Pendimethalin @ 1.25 kg a.i./ ha; FP: one hand weeding 25-30 DAS

Fertilizer management – IP: 100 kg DAP + 100 kg gypsum/ha; FP: 100 kg DAP/ha

Rhizobium management – IP: inoculation with rhizobium culture; FP: No inoculation

Disease management – IP: chemical control; FP: No control

Irrigation management: IP: one irrigation at flowering; FP: No irrigation

Source: Reddy and Reddy (2010).

189. The majority of farmers who continued lentil cultivation for more than 3 years cited the main reasons for doing that the low cost, the ready market, the remunerative price, and the suitability under low resource conditions. The main reasons for discontinuing lentil cultivation in crop rotation are the availability of better alternative crops, the lack of improved variety, the low yield and the high risk.

### 3.1.3 Processing facility

190. Milling technology: The export houses have modern milling facility, including sortex machine. They produce dehusked whole lentil (*chhanta*) as first grade products solely for export to Bangladesh and split lentil as second grade for domestic market and export to other countries. By-product obtained is *chunni-bhusi*, mainly supplied to India for use in cattle feed.

191. Availability of high-tech processing technologies: Currently, about 18 high-tech processing mills are operating in Nepal. These processing units are centrally located close to the Indian border and have access to transportation and communication facilities with the entire world. Each processing unit has a capacity of about 4-5 ton/hrs with installed sorting and grading facilities.

192. Birgunj, Bahraha and Nepalgunj are the main production hubs for the lentil industry in Nepal where most of the pulse mills and exporters are located. During last 10-12 years, lentil pulse production by the mills has almost doubled. This may be attributed to more area being put under lentil production (replacing other legume crops) and Indian export ban opening export opportunity for Nepal in Third countries.

### 3.1.4 Prices

193. Existing Market types for Nepalese lentil production (mill processed lentil) are (i) export 60% (main destination being Bangladesh), and (ii) domestic market 40%. The mill exports whole lentil (*chanta*) to Bangladesh, and sells split lentil (*dal*) in the local market.

194. Recent (as of March 2013) prices (mill gate) of whole grain (*chanta*) is Rs 116/kg (export to Bangladesh @ Rs 124/kg), and split grain (*dal*) for Rs 85/kg. Milling recovery is reported to be 70% (dehusked lentil) in Nepalgunj and 73% in Birgunj; the difference being due to lower level of purity of grain in Nepalgunj area. The mills get 80% whole grain (as first grade product), and 20% split grain (as second grade product) in the process of milling.

### 3.1.5 Branding

195. Until recently all exports to Bangladesh was under Kangaroo brand. Under this brand Indian lentil were exported to Bangladesh in the past. Bangladeshi consumers being familiar with this brand, Nepalese exporters choose to use this brand for export from Nepal as well. Last year an exporter from Bhairahwa registered this as his brand, and therefore from now the exporters will have their own brands for export of lentil to Bangladesh.

### 3.1.6 Export process

196. Deals finalized through broker in Bangladesh; gets Letter of Credit (LC) issued from the importing party. FNCCI district unit in the production area issues Certificate of Origin (CO) to the exporters. Quality certification also needed from Food lab and Plant quarantine.

## 3.2 CONSTRAINTS

### 3.2.1 Inadequate Lentil Production at Farm Level

197. The lentil industry is short of adequate supply to meet the export demand. Supply of lentil grain in the local market is in short of demand, and Canadian lentil imported to run the mills and also to meet domestic demand. There is need of focus on increasing production of lentil at the farm level. For this, the government need to give incentives to the farmers in the form of better access to improved seeds and other inputs, and promote improved cultivation practices with seed treatment, etc.

198. In order to cope with raw material deficit, there is no incentive or facilitation to import un-processed lentil into Nepal. A few millers have tried to import raw material to run their mills at a higher capacity, but the import related fees, rules and regulations constitute prohibitive constraints.

### 3.2.2 District/local taxes

199. Local tax collection in several places adds to cost of trade. Although the government abolished collection of local taxes on the highways, this is still continuing and is a non-tax barrier for promotion of export of lentil.

### *3.2.3 Insufficient availability of shipping containers*

200. Containers for shipment to the overseas (other than Bangladesh and India) are not easily and sufficiently available, and their cost sometimes becomes extremely high. Several containers are bringing imported goods from Kolkata to Nepal. If these containers could be rented for dispatch of export goods to Kolkata cost of transportation would reduce from IRs 6-7 per kg to IRs 4-5 per kg. This will contribute in improving cost competitiveness and at the same time solving the problem of container services so much required for export diversification to overseas countries.

### *3.2.4 Inadequate government/policy support*

201. The exporters feel the support from the government concerning the sector is extremely weak. Trade facilitation, Embassies services, support in the resolution of disputes with Bangladesh clients and banks, promotion of productivity and production in Terai, data generation and overall information and analysis of the sector are felt by ANROPI members as being inadequate. The exporters are facing problem in getting payment for their exports in time, and sometime payments are at risk.

202. Similarly, other potential markets (e.g. Sri Lanka, Middle East countries), in order to be properly prospected and invested, require that GoN provides some level of priority and support to exporters.

203. According to exporters, export incentive of 2-4% from the government is not being honored, and allegedly this is even being used by officials of Industry Department as a source of extra earning for them. If these allegations are true, either the government should honor its committed export incentive, or else withdraw it so that the exporters can plan accordingly.

### *3.2.5 Food Safety and Phytosanitary requirement*

204. While exporting lentil, most of the importing countries require a phytosanitary certificate (PC). PC declares the consignment of outgoing items free from any quarantine pest and conforming to the importing countries' phytosanitary requirements. In Nepal, Regional Plant Quarantine Offices nearby custom offices are providing this service to the exporters with nominal charges. Till now, such certificates issued in Nepal are being accepted by the importing countries. But the country might face difficulty in the future in exporting the product to the developed countries if Pest Risk Analysis (PRA) is conducted by accredited laboratories.

205. There are some food-related testing requirements in some of the importing countries. For example, Bangladesh requires test of fumigation of Methyl Bromide in exportable lentils; such tests are not required for exporting to India and other countries. However, this is not a barrier because the test conducted by the concerned Nepali authority (DFTQC) is widely accepted by importing countries. In the case of the treatment of radiation, India does not accept Nepal's certificate and therefore exporters need to go to certified laboratories in Kolkata, Sunauli or Luknow for the test. This is a time-consuming process, and involves additional cost.

### *3.2.6 Lack of a recognized food and quality certification capacity*

206. There is currently no established capacity in Nepal for an independent and internationally recognized and accredited food safety and quality certification.

207. Exporters from Nepal to the South Asian Region, BIMSTEC, SAFTA and SAARC (and also to OECD countries) will be confronted, in the near future, with request from importers asking for certification of compliance with SPS standards, essentially MRLs, POPs and heavy metals, besides the other conventional food safety requirements. India has already started to apply strict SPS requirement for other commodities. This trend will continue in the near future.

## **3.3 RECOMMENDATIONS**

208. The following recommendations are made for the Nepalese lentil industry to resolve the constraints to increasing exports. These are grouped under three headings: (a) Increasing supply of the product, (b) Improved quality and food safety, and (c) Government policy and trade facilitation.

### *3.3.1 Increasing Supply of the Product*

209. Increasing supply of lentil for the milling in the short run would require that imports of raw lentils are allowed to the millers by making import fees, rules and regulation to be facilitating rather than prohibitive.

210. The long term solution for increasing supply of raw materials should be sought by promoting sustained increase in production at the farm level. This would require substantial improvement in the lentil's seed supply chain, and also improvement in farming practices that results in substantial increase in yields (to be closer to the potential yield of 1.5 to 2 MT per ha) thus making lentil production economically attractive to its competing crops like wheat, sugarcane and other cash crops.

211. Studies should be conducted for thorough review of the seed supply chain and farm level cultivation practices to identify the problems and issues, and develop an action plan to address to the problems.

### *3.3.2 Improved Quality and Food Safety*

212. The improvement in quality of product should start from farm level. There is a need of improving purity of grains traded in the market, and promoting grading of the product by providing incentives to quality production. This will require promotion of intense farmer-trader forums, collective marketing by farmers for value addition, and contract farming.

213. There is a need for establishment and strengthening of institutional facilities, both in the government and private sector, towards increased access of traders/exporters to pest residue analysis, and certifications for food safety and SPS requirements.

### 3.3.3 Government Policy and Facilitation

214. Promotion of export would require that the government policies facilitate the export, and that the policies are stable so that the exporters could plan their exports on a long term basis. Local tax collection in several places along the highway should stop. The government should facilitate the utilization of the containers bringing imported goods to be used for export of the products. Trade facilitation, Embassy services, support in the resolution of disputes with Bangladesh clients and banks should be addressed. Export incentive of 2-4% should be either honored, or else withdrawn, for the exporters to plan accordingly.

### 3.3.4 Strategy: Lentil Policy anchored on ADS and National Flagship Program

215. Recent studies of the lentil value chain in Nepal have made detailed and insightful assessments and identified the key issues of the sector. Recommendations have also been generally well formulated and comprehensive. However, most recommendations have not been implemented and projects and programs that have tried to help the sector have not been able to ensure that the industry proceed on a self-sustaining growth path. While *what to do* is relatively clear, *how to do* it is less clear.

### What to do: Value Chain Development (production, marketing, institutions)

216. The main recommendation is to enhance the **development of the lentil value chain through production, marketing and policy/institutional support**. This will consist of a three pronged approach including (i) improved production and productivity of lentil at the farm level; (ii) improved postharvest operations and marketing of lentil; and (iii) improved policies, regulatory framework and institutions for lentil sub-sector. Without a well-organized value chain linking producers to input providers, processors, exporters, and service providers, the potential of increasing exports to Bangladesh and other potential markets will be difficult to achieve. Increasing requirements by importing countries and competition will make the future prospects for Nepali exports more challenging if the country continues to do business as usual. The key elements of the value chain development are summarized in the following table.

Outcomes	Outputs	Activities
1 Improved production and productivity of lentil at the farm level.	1.1 Improved supply chain for quality seeds through increased production of foundation seeds and certified seeds. 1.2 Lead Farmers (LFs) at the community level trained on improved production practices to serve the farmers as Local Resource Persons (LRPs). 1.3 Research to address on nutrient and disease management issues at the farm level.	1.1 Collaboration of NARC, private companies and seed producer groups for increased production and distribution of foundation seeds and certified seeds. 1.2 Training package on improved production practices developed, and lead farmers (LFs) at community level trained on the improved practices to serve the farmers as LRPs. 1.3 Support to the National Grain Legume Research Program to address on the present problems of mineral imbalances and widespread diseases at the farm level.
2 Improved post harvest operations and marketing of	2.1 Promotion of cleaning and grading of farm production, and collective marketing (including contract farming) by the	2.1 Support for farmer groups/cooperatives for collective marketing using cleaning and grading equipment, collection centers, storage facilities and contract farming.

lentil.	farmers. 2.2 Establishment of linkage/networking with banks in the importing countries especially with Bangladesh.	2.2 Facilitating linkage/networking with banks in the importing countries through government level negotiation for issuance of letter of credit for timely payment.
3 Improved policies, regulatory framework and institutions for lentil sub-sector.	3.1 Establishment of accredited laboratories for certification of quality standard. 3.2 Establishment of market intelligence system for promoting export marketing.	3.1 Support for establishment of accredited laboratories for certification of quality standard. 3.2 Support for establishment of research unit at the national level within TEPC for market intelligence and market research for export diversification.

### **How to do it: Policy embedded in ADS and National Program**

217. Similar value chain approaches have been suggested in the past. Some of the details might slightly change but the key elements are present in most previous studies. What is needed is a different way of anchoring the recommendations to the existing socioeconomic, policy, and political context of Nepal.

218. The development of the lentil value chain requires (1) a clear policy anchored on the incoming Agricultural Development Strategy (ADS) which will guide agricultural sector in the next 20 years; and (2) a specific approach to implement a national program on lentils.

### **Policy: Lentil as One of the 5 Prioritized Value Chains of the ADS.**

219. The prioritization of the lentil value chain in the national strategy ADS is based on an assessment of the growth potential, impact on the sector and income of farmers, and contribution to exports. Prioritization of a value chain in the ADS implies that there will be support over a long period (5 to 10 years) along all the stages of the value chain in order to achieve national impact. Sufficient resources and policy commitment will be harnessed to ensure that the value chain can achieve value added or export targets such as those listed in the “lentil export promotion action plan” with 100,000 ton export in the medium term (5 to 10 years). Without a clear policy and investment commitment to the sector, sustained over a sufficient period of time, the value chain will remain in a highly fluctuating state, highly vulnerable to the vagaries of climate and international markets. Increasing exports to Bangladesh or other potential markets will be difficult in light of the supply constraints, institutional weaknesses, and highly competitive nature of the world market.

### **Program: National Flagship on Lentil**

220. The national program on lentil (i) will be looking at and developing all the stages of the value chain, from seeds to final products, from production to processing, from market infrastructure to access roads and connectivity, from post-harvest technology to quality assurance and exports; (ii) will strengthen linkages among associations of farmers, traders, processors, input providers and other value chain actors in order to ensure effective investment; (iii) will aim at replication and linkages beyond the district and achieve national impact; and (iv) will work not only with one district or department but across districts and departments.

221. The manager of the lentil program is the CEO of Lentil Value Chain Development Alliance (Lentil VCDA). The Lentil VCDA is a society registered according to the law, owned by the key representatives of the lentil industry including farmers and their associations, entrepreneurs, input providers, logistics operators, warehouse managers, cooperatives, and other value chain actors. The commonality of all the actors is that they are all engaged commercially on the lentil value chain and are interested in promoting its commercial development while contributing to poverty reduction.

222. The Lentil VCDA will have access to a Lentil Value Chain Development Fund (Lentil VCDF). The members of the Lentil VCDA will nominate a Board according to the law and the Board will select the CEO to manage the operations of the program. The Board will include 6 elected members and 5 non-elected members. The non-elected members will be nominated by GON and include representatives from MOAD, MOI, MLD, FNCCI, and NRB. The Board will be chaired by one of the elected-members. The Management will prepare a business plan and an investment plan, to be approved by the Board. The operations of the VCDA will be audited according to the law. Moreover, they will also be audited according to regulations of the Development Partners supporting the VCDF.

### *3.3.5 Short-term Intervention: Trade Dialogues between Importers and Exporters*

223. During the visit to Bangladeshi importers of Nepali lentil, it was found that there are hardly direct relations between exporters in Nepal and importers in Bangladesh. Most of the time, the trade relations are mediated by agents. This intermediation adds to the cost of trade. Its rationale is the general mistrust and lack of familiarity between exporters and importers. To remedy this situation, it is recommended to hold regular meetings between Nepali exporters and Bangladeshi importers both in Dhaka and Kathmandu. The purpose is to ensure that through dialogue and exchange of information solutions to problems constraining trade be found, more trusting relations could be established, and direct relations between importers and exporters could be established.

## 4 CONCLUSIONS

224. The main conclusions of the report are:

1. **The lentil sector in Nepal has high potential of growth and export.** This has been confirmed directly by importers in Bangladesh, a analysis of the export potential using trade data, and assessment of the yield gap potential in Nepal. As already pointed out by ITC in 2007, the target of 100,000 tons of exports of lentils is an achievable one if the proper actions are taken. In addition to Bangladesh there is a growing demand for the lentils produced by Nepal in other countries. These include South Asia countries such as Sri Lanka and Pakistan, Middle East countries such UAE, Southeast Asian countries such as Singapore and Malaysia and other non-Asian countries such as USA.
2. **Increased exports of Nepali lentil depend on resolving supply constraints and being able to address SPS requirements.** The current exports of lentil from Nepal are dominated by Bangladesh imports. That market arose in the aftermath of the Indian export ban on pulses. Maintaining and even increasing the export volume to Bangladesh and other countries will require improving the supply response in Nepal that currently is constrained by low productivity, fragmented production, disorganized supply chain, lack of linkages among key actors in the chain (eg seed, research, and extension providers and farmers), and lack of capacity in the food safety and quality assurance system to comply with increasing requirements.
3. **In order to address these constraints, the lentil industry has to reorganize itself as an effective value chain.** Recommendations about what to do to develop the value chain are largely understood (productivity enhancement, postharvest and marketing, regulations and institutions) and have already been identified in the past. The key issue is how to move from recommendations to an implementation strategy.
4. **The development of an effective lentil value chain requires changes both in policy and program design.** Lentil value chain development needs to be anchored in the Agricultural Development Strategy (ADS) and a national Flagship Program based on building a Lentil Value Chain Development Alliance (Lentil VCDA) have to be implemented. Key to the success of the VCDA is to ensure that farmers, processors, traders and input/service providers to the lentil industry are represented in the Board of the VCDA. Through these measures the positive changes initiated under NEAT might be sustained after project completion.

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## APPENDIX 1. LENTIL EXPORTERS

Tribeni dal & oil industries P. Ltd Birgunj Tel: 051-525465, 01-4224074 (Kath)	Ram Dal Udyog Birgunj Tel: 01-4270730, 4272879	Narayani Modern Pulses Industries Birgunj Tel: 051-525556, 01-4226068	Shree Aadhunik Dal Udyog, Birgunj Tel: 051-4225124
Aadhunik Dal Udyog Birgunj Tel: 01-4273401, 4273402	Gyan Food Product Nepalgunj Tel: 01-4437991, 4437993	Kohinoor Agro Industries Dhangadhi Tel: 01-4244352, 4225009	Amrit Pulses Industries Birgunj Tel: 01-4244352, 4225009
Pooja Dal Mill Dhangadhi, Nepalgunj Tel: 01-4244352, 4225009	Hitesh Dal Udyog Nepalgunj 021-525627, 01- 4250001	Roongata Processing Industries Birgunj Tel: 051-521248, 524630	Shree Shyam Modern Dal Mill Rupandehi Tel; 071-521467, 522517
Manoj Modern Food & General Industries, Rupandehi Tel: 071-560851, 540651	Siddhartha Adhunik Dal Udyog Rupandehi Tel: 071-523590, 521592	Om Agro Product P. Ltd. Birgunj Tel: 051-521248, 524630	Chandanbala Khadya Udyog Biratnagar Tel: 021-435096
Krishna Modern Dal Udyog Bara Tel: 051-521622, 522219	Durga Modern Dal Mill Bhairahwa Tel: 071-520360, 521939		

5. The organizations to be contacted by the consultant include:
- Association of Nepal Rice Oils and Pulses Industries (ANROPI),
  - Trade and Export Promotion Center (TEPC),
  - Federation of Nepalese Chambers of Commerce and Industry (FNCCI),
  - Department of Food Technology and Quality Control (DFTQC),
  - Ministry of Commerce and Supplies (MOCS)
  - Nepal Agricultural Research Council (NARC)
  - Crop Development Directorate, Department of Agriculture (CDD/DOA)

**APPENDIX 2. LENTIL IMPORTERS OF BANGLADESH**

<b>S.N.</b>	<b>Name of Company</b>	<b>Address</b>
1	Adiba Enterprise	55/1, Purana Paltan (7 <sup>th</sup> Floor), Dhaka, Bangladesh
2	Sami Tex Bangladesh	319/4, East Goran, Road No. 10, Dhaka, Bangladesh
3	Maskot Global Inc	House 11/a, Road-41, Gulshan-2, Dhaka, N/A, Bangladesh
4	Banikbiz - Bangladesh	20/c k b Fazlul Kader Road (Azi Kasem), Chittagong, Bangladesh
5	Orion Associates	44/21, North Dhanmondi (Ground Floor), Dhaka, N/A Bangladesh
6	M/S :Lucky Enterprise	9/2 Gogan Babu Road, Khulna, Bangladesh
7	Exim Bangla Corporation	116 Strand Road, Banglabazar, Chittagong, Bangladesh
8	S.S. Trading	184/C, Khatungonj, Chittagong, Bangladesh
9	M/S Roba Enterprise	House # 20, Road # 18 Banani, Dhaka, Bangladesh
10	Ali Stores	319, D.T. Road, Pahartali, Chittagong, Bangladesh

**THE EXECUTIVE COMMITTEE OF PULSE TRADERS ASSOCIATIONS IN BANGLADESH**

<b>No</b>	<b>Name</b>	<b>Position</b>	<b>Address</b>	<b>Mobile No.</b>
1	Md. Samsuddin	President	M/s Arif Traders,8, Water Works road,dhaka	[REDACTED]
2	Haji Md. Yakub Ali	Sr. Vice president	Ms. Yakub Ali & Sons,193/194,Water works Rd.	[REDACTED]
3	Md. Abdur Rahman Montu	Vice President	Ms. Haji A Rashid& sons,178 WW Rd.Chakbazar	[REDACTED]
4	Md. Azizur Rahman	General secretary	Ms. Aziz Corp.189Water works Rd.Chakbazar	[REDACTED]
5	shahid Alam Ibrahim	Joint seretary	Ms. SR Corporation,18/1 Water works rd. dhaka	[REDACTED]
6	Md.Abu Zafar Khan	Asstt.Gen. Secretary	Ms. Sumon Traders,177water works Rd.Chakba.	[REDACTED]
7	Md. Khalid Basir ezaz	Trasurer	Ms. M A Traders,9 Begum Bazar,Dhaka	[REDACTED]
8	Haji. Md. TipuSultan	Organizing Secretary	Ms. T. and Company,5 Faria patti,Rahmatgonj	[REDACTED]
9	Md. Abdullah al mamun	Cultural Secretary	Ms. Bengal Traders,32 Water Works Rd	[REDACTED]
10	Salamat hossain	Publicity Secretary	Ms. Salamat Hossain,8/A WWR	[REDACTED]
11	Md. Salim Hossain	Executive Member		
12	Md. Rabbani Miah	Executive Member	Ms. Elahi Bharsa Store,14/1,water works Road	[REDACTED]
13	Hanif Miah	Executive Member	Ms. Hanif Enterprise,99 WWR	[REDACTED]
14	Nabi Alam	Executive Member	Ms. Rayhan Enter prise,42 Maulivi BazarDhaka	[REDACTED]
15	Md. Monsur Alam	Executive Member		
16	Md. Maksud	Executive Member	Ms. Ayub and brother,17 WWrd.	[REDACTED]
17	Md. Samim Ahmed	Executive Member	Ms. Arman&Brother,14/2 Water work	[REDACTED]
18	Rezwan Miah	Executive Member	Ms. Rezwan Trade4rs,204/1 WWR	[REDACTED]
19	Md. Mahabubul Alam	Executive Member	Ms.Salauddin& Brother,15 WW Rd.Dhaka	[REDACTED]
20	Md.Nizam uddin	Executive Member	Ms. Nizam international,5 WWR	[REDACTED]
21	Md. Salauddin	Executive Member	Ms. Salauddin,5WWR	[REDACTED]

### APPENDIX 3. LIST OF PERSONS INTERVIEWED

Name & Title	Institution	Place	Phone No.
Ajaya Parajuli, Executive Secretary	FNCCI	Kathmandu	[REDACTED]
Suyash Khanan, Director	TEPC	Kathmandu	[REDACTED]
Manish Agrawal, Director (Executive Member & Co-chairperson Trade Committee, FNCCI)	H.P. Agrawal Group	Kathmandu	[REDACTED]
Viswanath Nair, Executive (imports & exports)	TM Dugar Group	Kathmandu	[REDACTED]
Parneswor Chachan, Proprietor	Chachan Group	Kathmandu	[REDACTED]
Rakesh Singh	Kedia Group	Kathmandu	[REDACTED]
Bikram Singh B.K., Senior Assistant	FNCCI Nepalgunj	Nepalgunj	[REDACTED]
Rajendra Pradhan, Chief	DADO Banke	Nepalgunj	[REDACTED]
Lila Bahadur Rathor, Planning Officer	DADO Banke	Nepalgunj	[REDACTED]
Dhanai Yadav, Extension Officer	DADO Banke	Nepalgunj	[REDACTED]
Ganesh Panthi, Chief	National Seed Co. Nepalgunj	Nepalgunj	[REDACTED]
Dr Krishna Kumar Mishra, Acting Chief	NARC Regional Agriculture Research Station, Khajura	Nepalgunj	[REDACTED]
Ram Das Chaudhary, Scientist	NARC RARS Khajura	Nepalgunj	[REDACTED]
Chote Lal Chaudhary, Tech. Officer	NARC RARS Khajura	Nepalgunj	[REDACTED]
Laxmi Datta Joshi, Officer	Customs Office, Nepalginj	Nepalgunj	[REDACTED]
Jagat Ram Chaudhary, Office Assistant	Customs Office, Nepalginj	Nepalgunj	[REDACTED]
Ravindra K. Srivastava, Officer	Plant Quarantine	Nepalgunj	[REDACTED]
Baidnath Gautam, Chief	FTQC Lab Nepalgunj	Nepalgunj	[REDACTED]
K.D. Surana, Manager	Pooja Dal Mill	Nepalgunj	[REDACTED]
Ramesh Kandhu, Proprieter	Pramod Trading	Nepalgunj	[REDACTED]
Pradeep K. Chhajar, Reg. Manager	Gyan Food Products	Nepalgunj	[REDACTED]
Roshan Nidhi, Officer	FNCCI Birgunj	Birgunj	[REDACTED]
Dinesh Prasad Ray, Chief	DADO Parsa	Birgunj	[REDACTED]
Bijay K. Shrivastava, Senior Crop Development Officer	DADO Parsa	Birgunj	[REDACTED]
Dayaram Harijan, J.T.	DADO Parsa	Birgunj	[REDACTED]
Suresh Kediya, Manager	Ram Dal Udyog	Birgunj	[REDACTED]
Mohan Lal Agrawal, Director	Chachan Group	Birgunj	[REDACTED]

Suresh Kumar Roongta, Director	Roongta Group	Birgunj	[REDACTED]
Rajesh Khandewal, Director	Triveni Group	Birgunj	[REDACTED]
Ram Hari Aryal, Chief	Customs Office	Birgunj	[REDACTED]
Mohan Mahato, J.T.	Plant Quarantine	Birgunj	[REDACTED]
Ram Kumar Chaudhary, Chief	Food Lab	Birgunj	[REDACTED]
Ashok K. Baidya, Director (President, FNCCI Birgunj)	Hemant Industries	Birgunj	[REDACTED]

## **APPENDIX 4. NEWSPAPER ARTICLES ON LENTILS**

**The Daily Star (December 27, 2012)**

**Cheap imports pull down lentil prices in Chittagong**

**Shahenoor Akther Urmi, Chittagong**

Cheap imports from Canada and Australia have flooded the lentil market in the last fortnight to bring down the item's price significantly.

Around 119,000 tons of lentils have been imported from Canada and Australia in the July-November period of this year, about 310 per cent rise year-on-year, according to data from Chittagong Port Authority.

"Consumers prefer the Nepali lentil variety because of their superior quality, but the lentil growing season has just started in Nepal," said Abul Basher Chowdhury, chairman of BSM Group, a leading importer.

He added that importers are making do with imports from Canada and Australia to meet the market demands.

"We cannot supply enough to fulfill the traders' demand due to the short supply of Nepali lentil in the market," said Md Azizul Haque, proprietor of Haque Traders at Khatungonj, one of the biggest wholesale markets in the country.

The lentil trader added: "Although the Canadian and Australian lentils are cheaper than the Nepali variety, consumers still prefer the latter."

"But lentil businessmen have bank loans to repay, so they are opting for the cheaper varieties, which are readily available in the market," Haque added.

Last year Nepali lentils sold at Tk 80-Tk 84 per kg, but that has shot up to Tk 130 a kg this year; last week the price ranged at Tk 138 to Tk 140 per kg.

The Canadian and Australian lentils are selling at Tk 58-70 a kg in the market, of late.

### **The Kathmandu Post (January 18, 2013)**

KAKKARBHITTA, OCT 07 - About 52 tonnes of lentils exported to Bangladesh last week have been held up at the Bangladeshi border as the shipment's no objection certificate (NOC) sent by a Bangladeshi bank appeared to be fake. The lentils had been exported by Puja Dal Mill.

It is understood that Bangladeshi customs has been investigating Rasi Traders, an importer of Nepal pulses, over the phony paperwork. A bank issues a NOC only after the importer opens a letter of credit to pay for the import. However, exporters here say that cases of Bangladeshi traders importing goods by making fake NOCs have been rising.

In the latest incident, the Nepali exporter Puja Dal Mill has been saved from being duped by the alertness of Bangladeshi customs. About six months ago, a Nepali exporter had dispatched 120 tonnes of lentils to Bangladesh, but it has not received payment of US\$ 114,000 for the consignment due to a forged NOC.

Yadav Shiwakoti, chief officer at Nepal Transport and Warehouse Management Company, Kakkarbhitta, says the Bangladeshi customs office has started an investigation into fake NOCs. He added that Bangladeshi customs had increased scrutiny of Nepali exports following recent cases of fraud. This is not the first time that local traders have suffered while exporting goods to Bangladesh. Bimal Acharya, a member of the Eastern Chamber of Commerce and Industry, says they had been ruined by being frequently scammed by Bangladeshi traders. "It has now turned into a major menace that we are being deceived over payment for exported goods," he added.

Exporters and customs agents have blamed Nepal Transport and Warehouse Management Company for not handling the goods properly which has resulted in non-payment for exports. The company hands over exported products to the Bangladeshi customs office for checking and clearance.

However, the company's manager Aranath Dhal says that they had handed over the exported lentils to Bangladeshi customs in good condition. "We have legitimate documents that prove that the traders have received the exported goods," he added. Dhal, however, admitted that misconduct by Bangladeshi importers has irritated local traders.

**Posted on:** 2012-10-08 07:58

## **Ekantipur – LENTIL EXPORTS TO BANGLADESH FALL ALMOST TO NIL**

KAKKARBHITTA, MAY 24, 2013. Lentil exports to Bangladesh have slowed to almost nil in the last two months after importers stopped buying Nepali products citing higher prices. Nepali traders said that they have not received any orders for lentils from Bangladesh even though it is Nepal's largest customer.

According to Nepal Transit and Warehouse Company, the facilitator of Nepal-Bangladesh trade, exports across the eastern border to Bangladesh have been almost zero since March. "Bangladeshi importers are not interested in buying Nepali lentils even at reduced prices," said trader Bimal Acharya.

This is a big setback for Nepal as Bangladesh absorbs 89 percent of Nepal's exports of lentils. According to the Ministry of Agriculture Development, Bangladesh bought 29,579 tonnes of lentils out of Nepal's total exports of 33,151 tonnes in fiscal 2011-12. Nepal earned Rs 2.45 billion from its exports to Bangladesh out of the total export revenues of Rs 2.67 billion.

Meanwhile, government statistics show that lentil exports have been falling since 2008-09 despite an increase in production. During that year, lentil exports reached 56,767 tonnes worth Rs 5.66 billion to become the country's largest export. Exports to Bangladesh through the Kakkarbhitta border point came down to 19.39 million tonnes this year from 23.01 million tonnes last year, according to Nepal Transit and Warehouse Company.

Overall lentil exports shrank to 37,569 tonnes worth Rs. 3.47 billion after the government banned exports in 2009-10 citing a possible food deficit. After entrepreneurs assured the government that exports would not affect the country's food supply, it lifted the restriction. In 2010-11, exports amounted to 37,425 tonnes worth Rs 3.34 billion.

Nepal has been exporting lentils to Bangladesh since the Kakkarbhitta-Fulbari-Banglabanda route opened in June 1997. This route is not used to export other pulses.

However, Nepali traders have been experiencing frequent problems while exporting lentils. Traders had halted exports last year after the no objection letters (NOC) sent by Bangladeshi banks were found to be fake. Nepali traders estimated that they lost US\$ 114,000 on lentil exports totalling 120 tonnes due to the fraudulent NOCs.

According to the Food and Agriculture Organization (FAO) of the United Nations, Nepal is the world's sixth largest producer of lentils after Canada, India, Turkey, Australia and the US. Nepal's output in 2011 came to 206,869 tonnes.

Lentils are produced in all the districts in the country except Manang and Mustang. Commercial production, however, is concentrated in the Terai because of its favourable climatic and soil conditions. The region accounts for more than 90 percent of the lentils grown in Nepal.

**Posted on:** 2013-05-24 08:56

<http://www.ekantipur.com/2013/05/24/headlines/Lentil-exports-to-Bangladesh-drops-to-almost-nil/372154/#.UaHDGMnsUqs.gmail>

**APPENDIX 5. AREA, PRODUCTION AND YIELD OF LENTIL IN NEPAL,  
2010/11**

	Area (ha)	Production (MT)	Yield (MT/ha)
<b>Nepal</b>	<b>207591</b>	<b>206869</b>	<b>0.997</b>
<b>20 districts</b>	<b>197756</b>	<b>198120</b>	<b>1.002</b>
Dang	27580	27663	1.003
Kalilal	21500	21450	0.998
Sarlahi	17455	18912	1.083
Rautahat	19342	15287	0.790
Bardiya	15223	14998	0.985
Bara	12779	13566	1.062
Sunsari	7600	11400	1.500
Banke	11323	11323	1.000
Saptari	7125	8776	1.232
Siraha	9758	8007	0.821
Parsa	6985	7954	1.139
Nawalparasi	8870	6968	0.786
Morang	5700	6500	1.140
Rupandehi	4861	5004	1.029
Chitwan	5024	4562	0.908
Kapilbastu	4545	4265	0.938
Kanchanpur	3395	3667	1.080
Moahottari	4125	3659	0.887
Jhapa	2001	2198	1.089
Dhanusha	2565	1961	0.765

Note: 20 districts are the top ranked districts in the country based on production of lentil.  
Source: MOAC (2011).

## APPENDIX 6. WORLD PRODUCTION BY CONTRY

World Lentil Production by Country, 2001-2011 ('000 MT)

Country	2001	2002	2003	2004	2005	2006	2007	2008	2009	2001 0	2011
Canada	566. 3	328. 0	484. 6	915. 8	1,16 4.3	692. 8	733. 9	1,04 3.2	1,51 0.2	1,94 7.1	1,53 1.9
India	915. 2	974. 4	873. 2	1,03 7.8	994. 2	946. 2	910. 0	810. 0	953. 3	1,03 1.6	943. 8
Turkey	520. 0	565. 0	540. 0	540. 0	570. 0	622. 7	535. 2	131. 2	302. 2	447. 4	406. 0
USA	131. 5	116. 6	110. 8	189. 7	238. 0	147. 1	165. 6	108. 5	265. 1	392. 7	214. 6
Australi a	266. 0	67.0	103. 8	52.3	210. 0	36.0	131. 0	64.2	143. 0	140. 0	379. 7
Nepal	143. 1	148. 4	150. 0	158. 7	160. 7	158. 0	164. 7	161. 1	147. 7	151. 8	206. 9
China	125. 0	125. 0	132. 0	144. 0	135. 0	127. 0	134. 0	150. 0	120. 0	125. 0	150. 0
Banglad esh	126. 0	115. 0	116. 0	122. 2	121. 1	115. 4	116. 8	71.5	60.5	71.1	80.4
Syria	177. 5	132. 8	168. 4	125. 3	153. 7	180. 7	109. 0	34.1	102. 5	77.3	11.2
Pakistan	26.9	26.2	29.2	31.1	25.9	17.9	21.0	14.6	14.4	10.9	13.2
Iran	104. 4	117. 0	115. 5	110. 8	113. 2	100. 8	104. 7	56.1	84.0	100. 2	98.5
<b>World</b>	3,25 2.1	2,88 4.2	2,98 0.5	3,60 8.5	4,04 4.0	3,34 0.1	3,30 0.2	2,82 6.0	3,90 5.7	4,76 5.6	4,41 1.1

Source: FAOSTAT

Country	Growth rate	
	2001- 11	2007- 11
Canada	6.04	9.10
India	0.02	1.37
Turkey	-2.69	2.93
USA	3.33	7.84
Australia	2.22	12.63
Nepal	0.77	1.72
China		
Bangladesh		
Syria		
Pakistan		
Iran		
<b>World</b>		

World Lentil Area Harvested by Country, 2001-2011 ('000 Ha)

Country	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Growth rate	
												2001-11	2007-11
Canada	664.1	356.5	499.2	714.1	785.0	554.5	576.7	700.2	963.2	1,335.5	998.4	3.53	7.57
India	1,477.8	1,470.0	1,380.0	1,400.0	1,470.0	1,510.0	1,470.0	1,310.0	1,375.9	1,479.4	1,597.4	0.11	1.25
Turkey	470.0	492.0	442.0	439.0	439.9	424.1	389.5	196.1	210.3	234.4	214.8	4.28	4.39
USA	79.7	87.0	95.9	133.1	177.7	164.7	119.4	105.6	164.3	256.6	166.3	3.46	6.73
Australia	158.0	165.0	83.1	127.6	127.3	153.0	130.0	117.0	104.0	142.0	218.8	0.61	5.36
Nepal	178.7	180.2	183.3	187.4	188.9	183.2	189.2	189.5	183.8	187.4	207.6	0.37	0.76

Source: FAOSTAT

World Lentil Yield by Country, 2001-2011 (MT/Ha)

Country	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Growth rate	
												2001-11	2007-11
Canada	0.853	0.920	0.971	1.282	1.483	1.249	1.273	1.490	1.568	1.458	1.534	2.512	1.531
India	0.619	0.663	0.633	0.741	0.676	0.627	0.619	0.618	0.693	0.697	0.591	0.084	0.117
Turkey	1.106	1.148	1.222	1.230	1.296	1.468	1.374	0.669	1.437	1.909	1.889	1.594	7.319
USA	1.649	1.340	1.155	1.425	1.340	0.893	1.387	1.028	1.613	1.530	1.290	0.123	1.105
Australia	1.684	0.406	1.250	0.410	1.650	0.235	1.008	0.549	1.375	0.986	1.735	1.610	7.264
Nepal	0.801	0.823	0.818	0.847	0.851	0.862	0.871	0.850	0.804	0.810	0.997	0.397	0.960

Area, Production and Yield of Lentil in India, 1995 and 2005

State	Area ('000 ha)		Production ('000 MT)		Yield (MT/Ha)	
	1995	2005	1995	2005	1995	2005
UP	526	599	392	493	0.745	0.823

Bihar	177	193	141	153	0.798	0.791
<b>India</b>	<b>1192</b>	<b>1415</b>	<b>780</b>	<b>968</b>	<b>0.654</b>	<b>0.684</b>

Source: Reddy and Reddy, 2010.

## APPENDIX 7. WORLD EXPORT AND UNIT VALUES

Export Quantity ('000 MT)

Country	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Canada	490.66	351.10	370.88	373.55	576.88	683.02	921.39	852.88	1,240.80	1,183.31
USA	98.93	103.14	97.20	87.55	162.52	130.73	122.77	168.65	184.08	209.13
Turkey	158.64	119.15	216.92	171.19	118.42	301.33	186.27	70.34	130.06	194.55
Australia	217.70	242.05	84.60	150.31	108.34	173.04	101.61	76.03	67.12	137.98
UAE	12.70	10.68	5.47	36.68	3.55	4.66	8.60	36.61	24.64	93.60
Syria	12.44	10.65	69.73	71.04	60.60	79.43	243.17	44.03	11.41	42.07
Nepal	15.09	27.79	30.45	15.25	14.59	7.78	4.11	16.42	56.77	37.57
China	14.45	21.39	32.87	37.42	34.45	14.75	12.06	17.97	18.13	23.13
Ethiopia	-	1.69	-	-	5.13	-	9.61	10.80	12.95	17.64
Sri Lanka	-	-	-	-	-	-	-	7.21	16.29	14.25
India	106.11	86.40	83.05	136.92	281.28	121.01	-	-	-	-

Source: FAOSTAT

Export Unit Value (US\$ per mt)

Country	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Canada	302	323	411	425	393	354	481	936	740	829
USA	373	383	490	517	416	369	495	678	694	711
Turkey	538	385	407	499	600	416	498	1,439	1,346	1,113
Australia	314	297	346	394	437	384	539	950	905	812
UAE	402	374	423	266	467	540	603	914	1,104	587
Syria	546	582	411	392	357	459	593	1,580	1,737	1,445
Nepal	451	217	423	458	498	600	761	1,345	1,287	1,363
China	249	255	252	271	316	359	475	747	680	766
Ethiopia		332			588		605	796	905	874
Sri Lanka								1,723	1,215	1,122
India	484	464	451	480	525	587				

Source: FAOSTAT