Census Survey of Indian Paper Industry Project
(Statistical Data Collection Cell)

Team:

Dr. Kawaljeet Singh – Sc E II & PI

Mr. Arun Kumar- SRF

Ms. Zarka Afroz- PA (PG)

Project Staff

- **Broad Area of Research:**

A. **The basic aim of the project is to enumerate the primary data of the Indian paper industry, such as historical trend and pattern of consumption, present and enhanced installed capacity, green field projects, projects in pipe line, number of idle units and production, total number of pulp & paper units, present and future trend of import & exports and to under economics of demand & supply gaps.**

A. **This project helps the industry/Government/ stakeholders to formulate effective policy or schemes for the pulp paper and allied industries.**

Major Outlines of Indian Paper Industry (2017-18)

No. of Mills		861
Total Installed Capacity, million tons		27.43
Operating Installed Capacity , million tons		22.73
Production of Paper, Paperboard and Newsprint , million tons		18.91
Capacity Utilization, %		~83
No. of Running units		497
No. of Mills Closed		364
Idle installed capacity, million tons		5.32
Per capita Consumption (kgs)		14.73
Global Share		4.62%
Contribution From Different Segments (million tons)		
Wood Based	Agro Based	RCF Mills
3.46	1.73	13.72

TRENDS OF OPERATING CAPACITY, PRODUCTION AND TOTAL SUPPLY

Year	Operating Capacity	Production	Total Supply
2010-11	14.71	12.95	14.04
2011-12	15.59	13.89	15.51
2012-13	17.17	15.21	16.80
2013-14	18.17	16.41	18.15
2014-15	19.72	16.59	18.33
2015-16	20.41	17.6	19.61
2016-17	20.65	16.91	20.18
2017-18	22.73	18.91	21.17

FOREIGN EXPOSURE

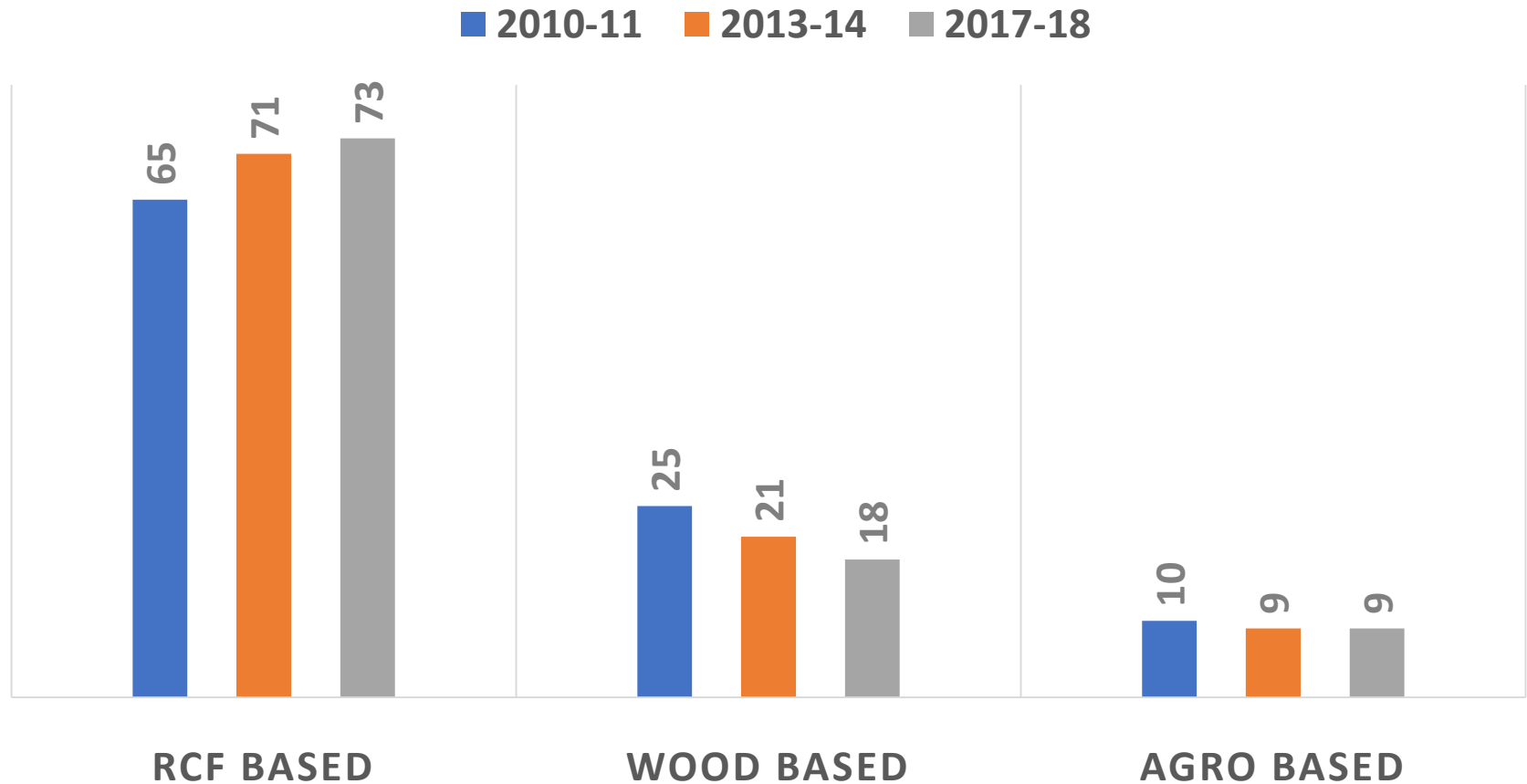| Year	Import	Export
2010-11	2.010	0.921
2011-12	2.392	0.770
2012-13	2.391	0.799
2013-14	2.569	0.834
2014-15	2.694	0.956
2015-16	2.983	0.973
2016-17	4.310	1.040
2017-18	3.579	1.323
2018-19 (April to Jan)	2.761	1.599

FOREIGN EXPOSURE
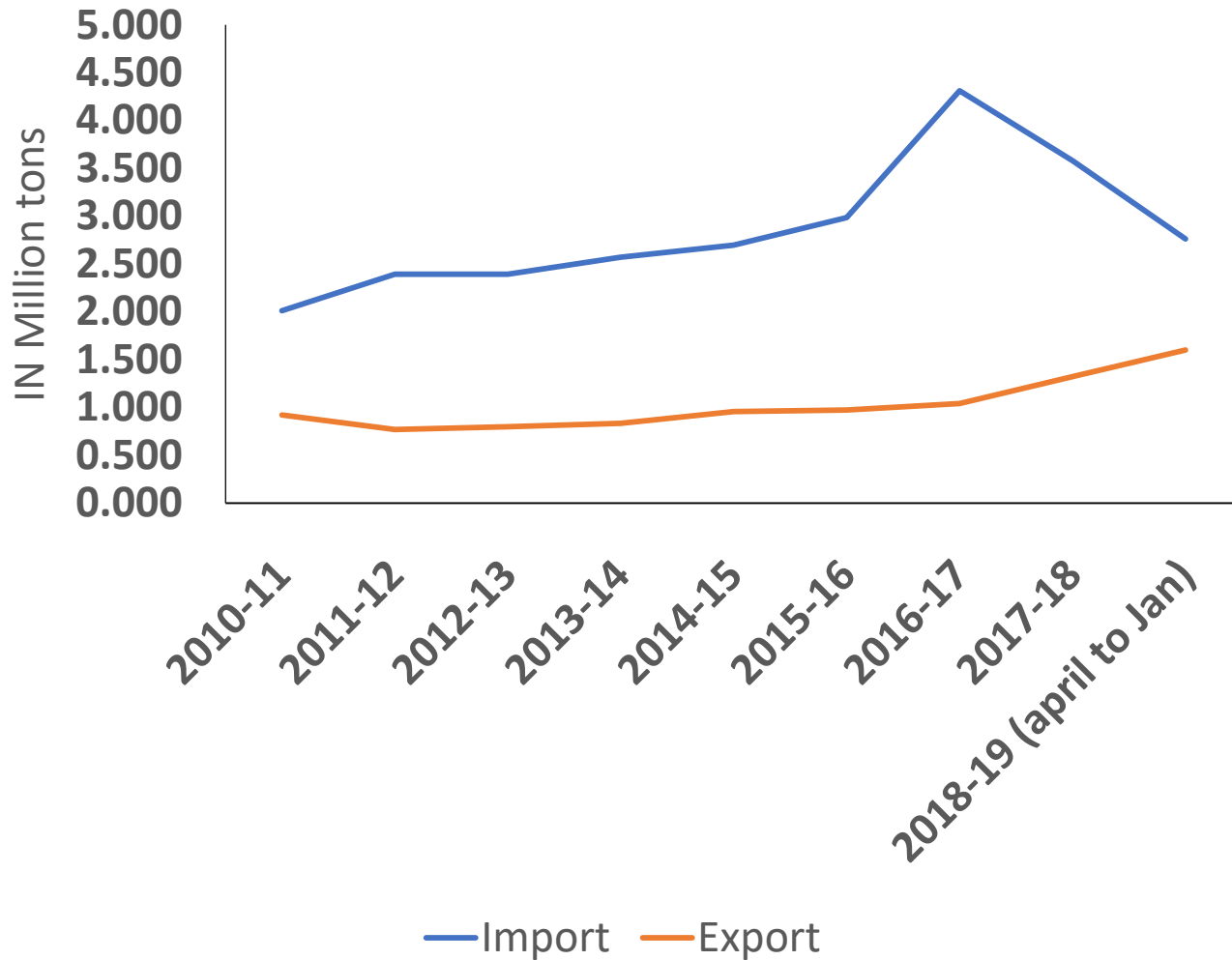
PRODUCTION SHARE OF DIFFERENT SEGMENTS MILLS
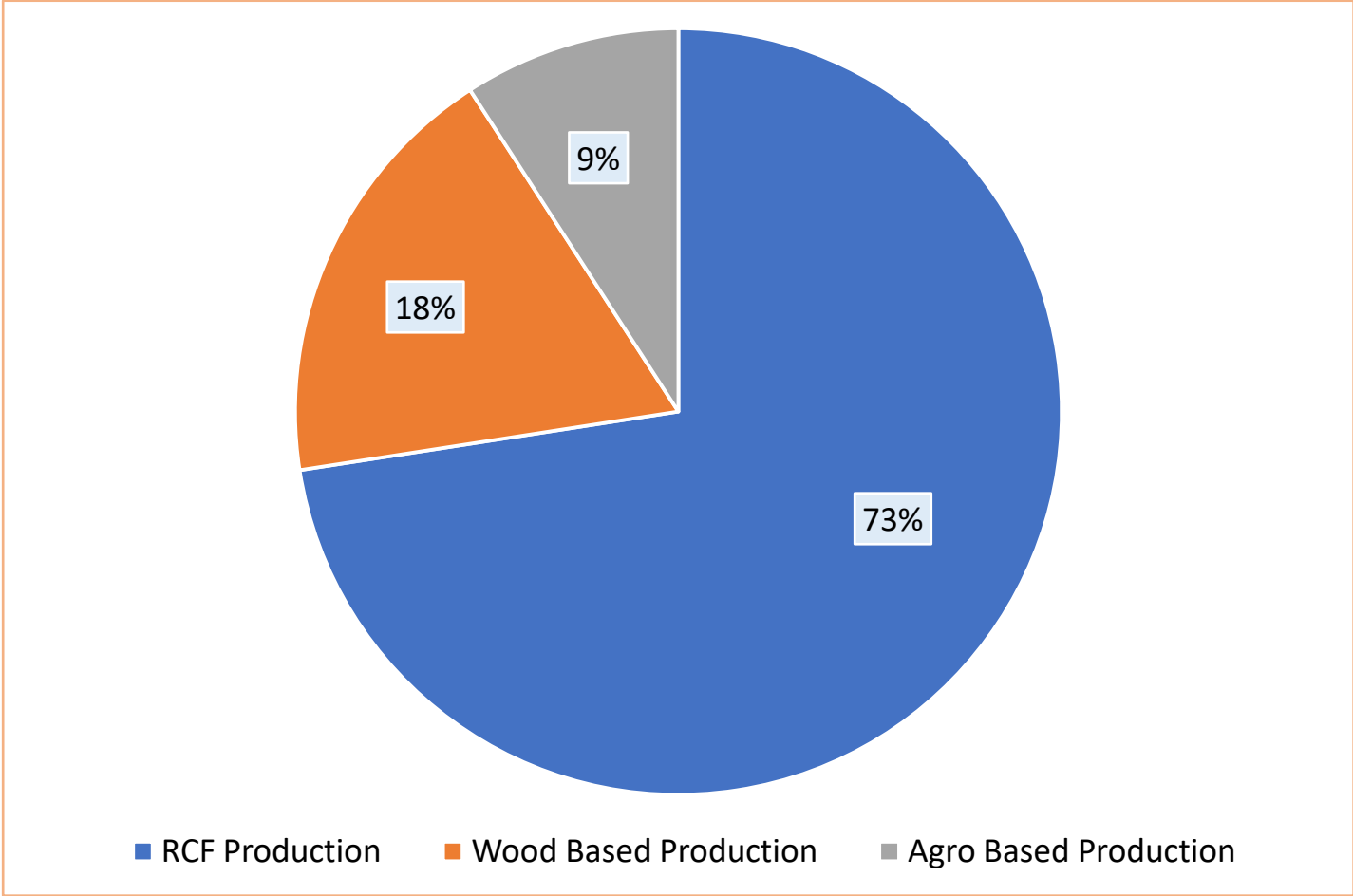
TRENDS OF CONTRIBUTION OF DIFFERENT SEGMENTS

Activities carried out in the Year 2017-18

- **The data updation was continued on continuous basis**

- **A Sectoral Report of the Indian Paper Industry upto 2017-18 has been prepared and presented in the Research Steering Committee (RSC-DCPPAI).**

- **Recovered Paper Trade flow in the India – Research Paper published under the Census Survey (paper presented in Paperex-Chennai)**

- **Waste Paper Collection Mechanism in India and estimated recovery rate from different grades of paper – a treatise made in association with IPMA, IARPMA and INMA for a project being executed by AOTS- JPA- Indian Paper Associations-CPPRI**

- **Waste Paper recovery rate figures were calculated and provided to DPIIT (Formerly DIPP) for further action (in view to draft Public Procurement Order-PPO).** **(Slide Attached)**

- **Locational Map prepared for the mills lying in the River of Ganga basin and forwarded to the concern division for further submission to Panchayat Raj Ministry Program.**

- **Broad categories of product information such as Writing & Printing, Kraft and Newsprint entered for the 200+ operational mills.**

- **Exercise were carried out to update the addresses and contact persons information in the master directory**

- **40+ Annual reports of various paper mills (2017-18) were downloaded and the figures updated.**

- **Under the project activities variety wise cluster information was updated for the following clusters:**

  ❖ **Kashipur, Muzaffar Nagar, Meerut, Vapi, Morbi, Surat, Valsad, Bharuch, Kolkata, Ludhiana, Patiala, Amritsar, Hyderabad, Co imbatore, Chennai, Shivakashi.**

- **Import Export data prepared for chapter 47,48 & 49.**

- **WPI (Whole sale price index) data updated and included in analysis.**

- **A new questionnaire was designed for data collection in consultation with associations. The questionnaire has been tested and now being used.**

- **Statistical Data Collection Cell actively giving inputs for the various FTA such as RCEP, India Korea, India Peru, ASEAN, Australia New Zealand, India – Brunei, India-Canada, India-Israel, India-EFTA, 9th India-Japan Strategic Dialogue on Economic Issues-inputs, India-Systematic country Diagnostic etc.**

DATA ANALYSIS

- **Holt-Winter Exponential method applied on the production data. It gave us point forecast value.**

- **Projection model prepared through Holt-Winter Exponential method for the waste paper import.**

- **Regression method applied on Capacity & Production data.**

- **Simple forecasting method tested on production data.**

- **Reliability of other statistical method is also being investigated.**

Holt-Winter Exponential Methods

- **Holt-Winter method is used to cast time-series forecasting based on exponential smoothing mechanism using increasing or decreasing trend and seasonality. This method is used to extract, analyse statistics and characterize results more accurately to predict the future based on the historical data/trend.**

Holt-Winter Forecasting for Import of Waste Paper

Year	Point Forecast	Lo 80	Hi 80	Lo 95	Hi 95
2017-18	3.46	3.18	3.74	3.03	3.88
2018-19	3.6	3.26	3.94	3.08	4.12
2019-20	3.74	3.29	4.2	3.05	4.44
2020-21	3.88	3.28	4.49	2.96	4.81
2021-22	4.03	3.24	4.81	2.82	5.23

Holt-Winter Forecasting for Import of Waste Paper

Forecasts from HoltWinters
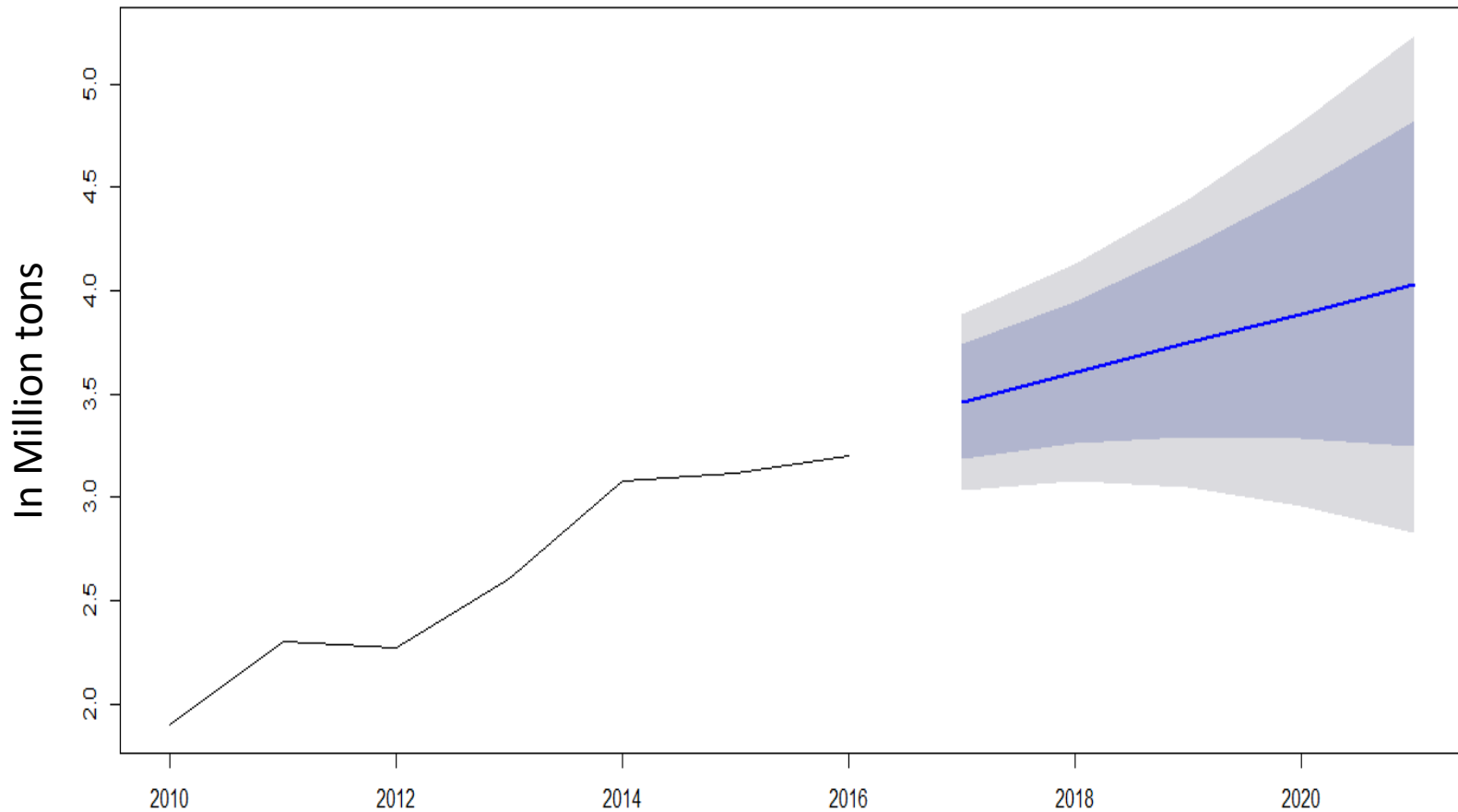
Holt-Winter Forecasting for the Capacity Expansion

Year	Point Forecast	LO 80	Hi 80	LO 95	Hi 95
2017-18	23.48	22.68	24.27	22.26	24.7
2018-19	24.55	23.64	25.47	23.15	25.96
2019-20	25.63	24.56	26.7	23.99	27.27
2020-21	26.71	25.46	2797	24.79	28.63
2021-22	27.79	26.33	29.25	25.55	30.03

Holt-Winter Forecasting for the Capacity Expansion
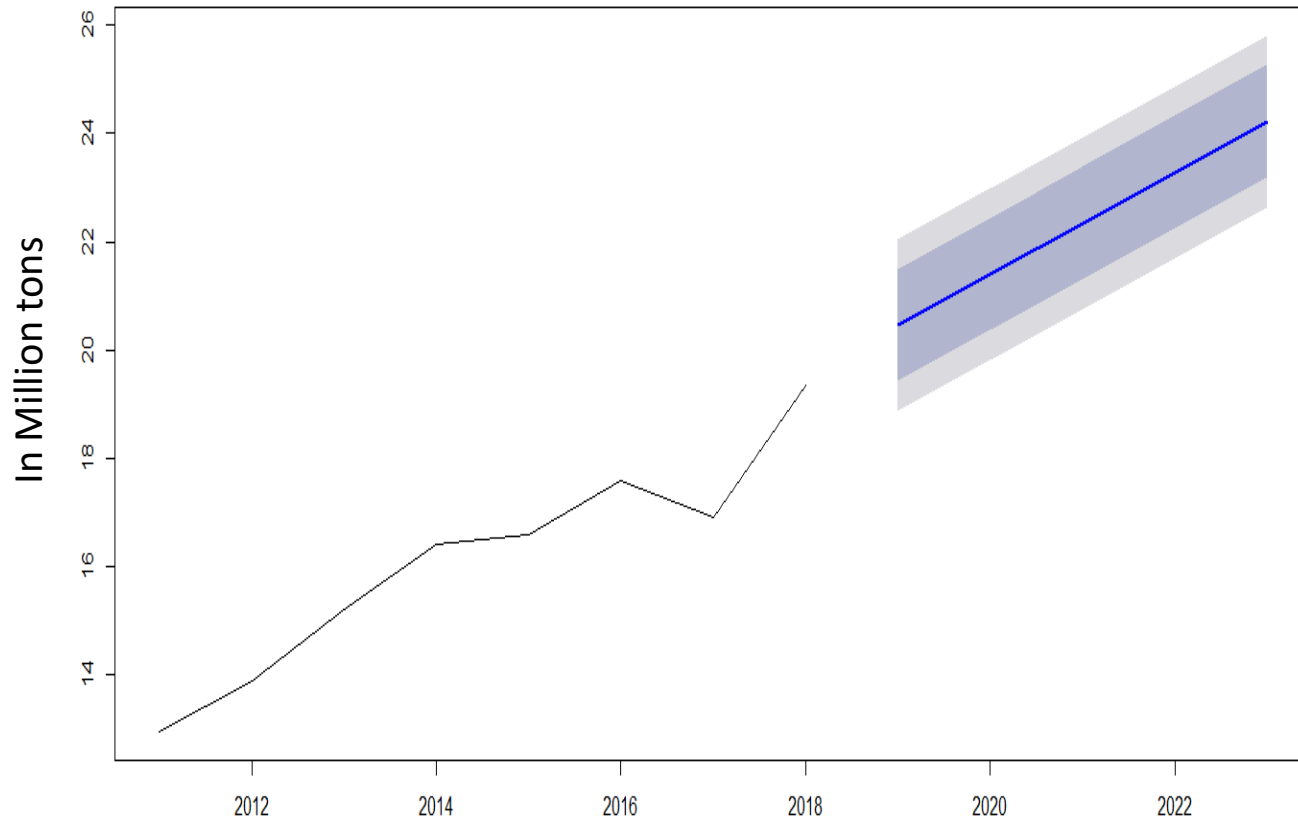

Forecasts from HoltWinters
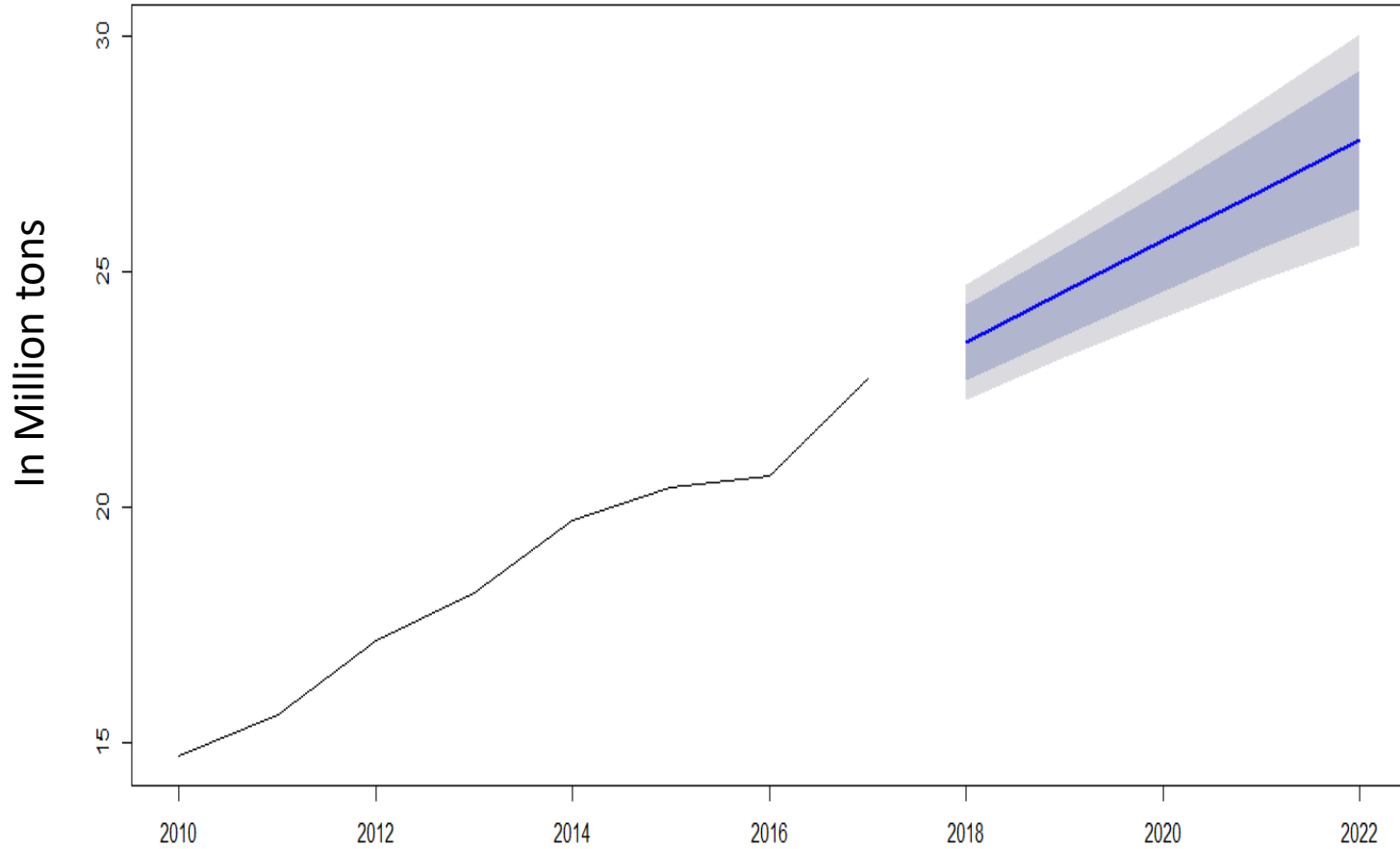
Holt-Winter Forecasting for Production of Paper, Paperboard & Newsprint

Year	Point Forecast	Lo 80	Hi 80	Lo 95	Hi 95
2018-19	20.47	19.43	21.5	18.88	22.05
2019-20	21.41	20.37	22.44	19.82	22.99
2020-21	22.35	21.31	23.38	20.76	23.93
2021-22	23.29	22.25	24.32	21.7	24.87
2022-23	24.23	23.19	25.26	22.64	25.81

Holt-Winter Forecasting for Production of Paper, Paperboard & Newsprint
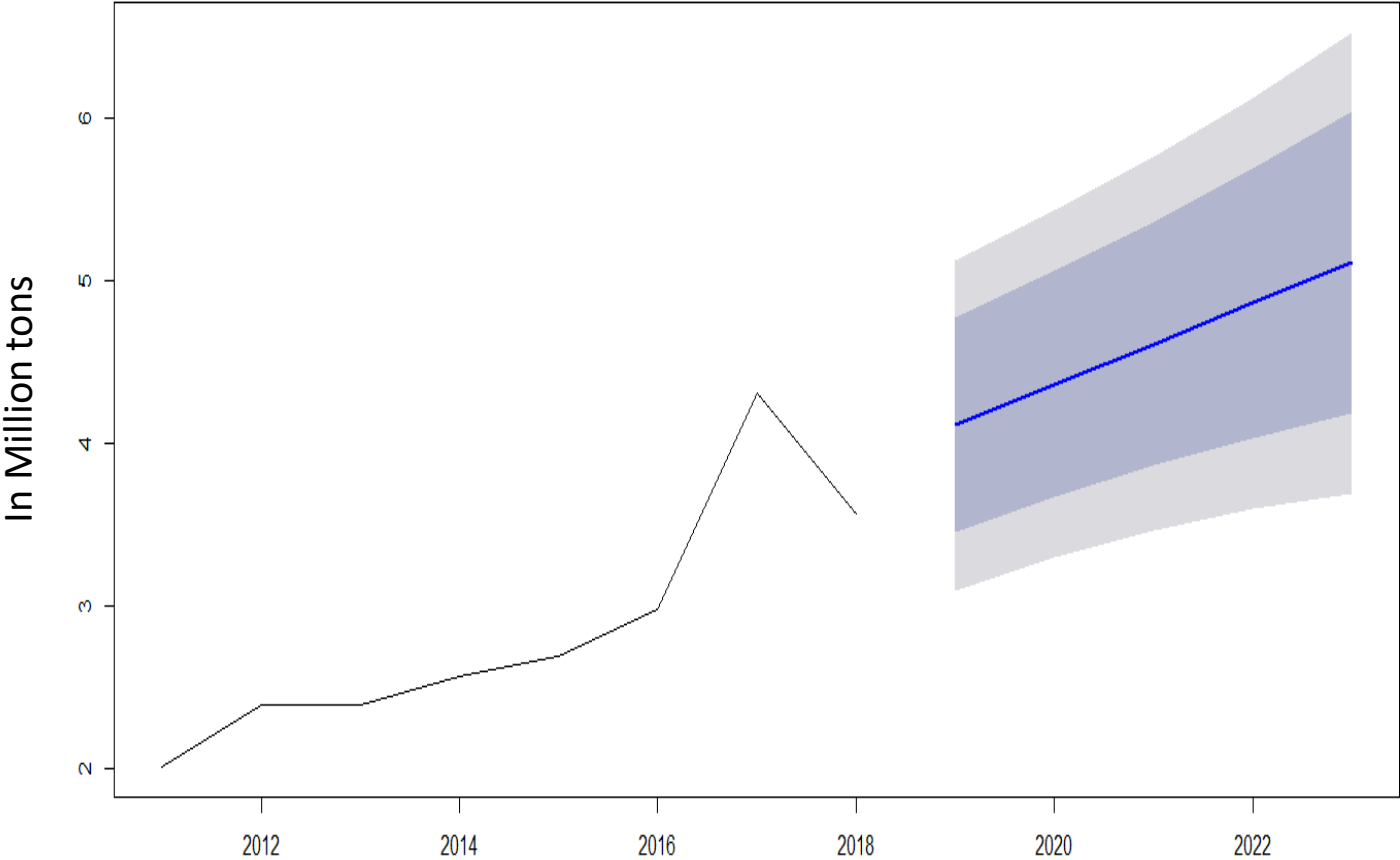

Forecasts from HoltWinters

Holt-Winter Forecasting for Import of Paper, Paperboard & Newsprint

year	Point forecast	Lo 80	Hi 80	Lo 95	Hi 95
2017	4.12	3.45	4.78	3.09	5.13
2018	4.36	3.67	5.06	3.29	5.43
2019	4.61	3.86	5.36	3.46	5.76
2020	4.86	4.03	5.69	3.59	6.13
2021	5.11	4.18	6.03	3.69	6.53

Holt-Winter Forecasting for Import of Paper, Paperboard & Newsprint

Forecasts from HoltWinters

Future work plan:

- Questionnaire is generated and tested for the collection of enhanced information of the individual unit. If response is obtained, we may be able to get main variety wise production, plant details, process details etc.

- Unit wise data collection mechanism is ongoing and data booklet for the year 2017-18 will be out very soon.

- Census team is working to change the data collection methodology and will try to come out with an app based software based on multiple operating systems.

- Census team has located the major clusters of the paper industry and working to depute cluster wise data collection executive on periodical basis.