



منظمة الأغذية
والزراعة للأمم
المتحدة

联合国
粮食及
农业组织

Food and
Agriculture
Organization
of the
United Nations

Organisation des
Nations Unies
pour
l'alimentation
et l'agriculture

Продовольственная и
сельскохозяйственная
организация
Объединенных
Наций

Organización
de las
Naciones Unidas
para la
Alimentación y la
Agricultura

ASIA AND PACIFIC COMMISSION ON AGRICULTURAL STATISTICS

TWENTY-SIXTH SESSION
Thimphu, Bhutan, 15 - 19 February 2016
Agenda Item 5.2
AMIS Balance Sheet Methodology used in Indonesia

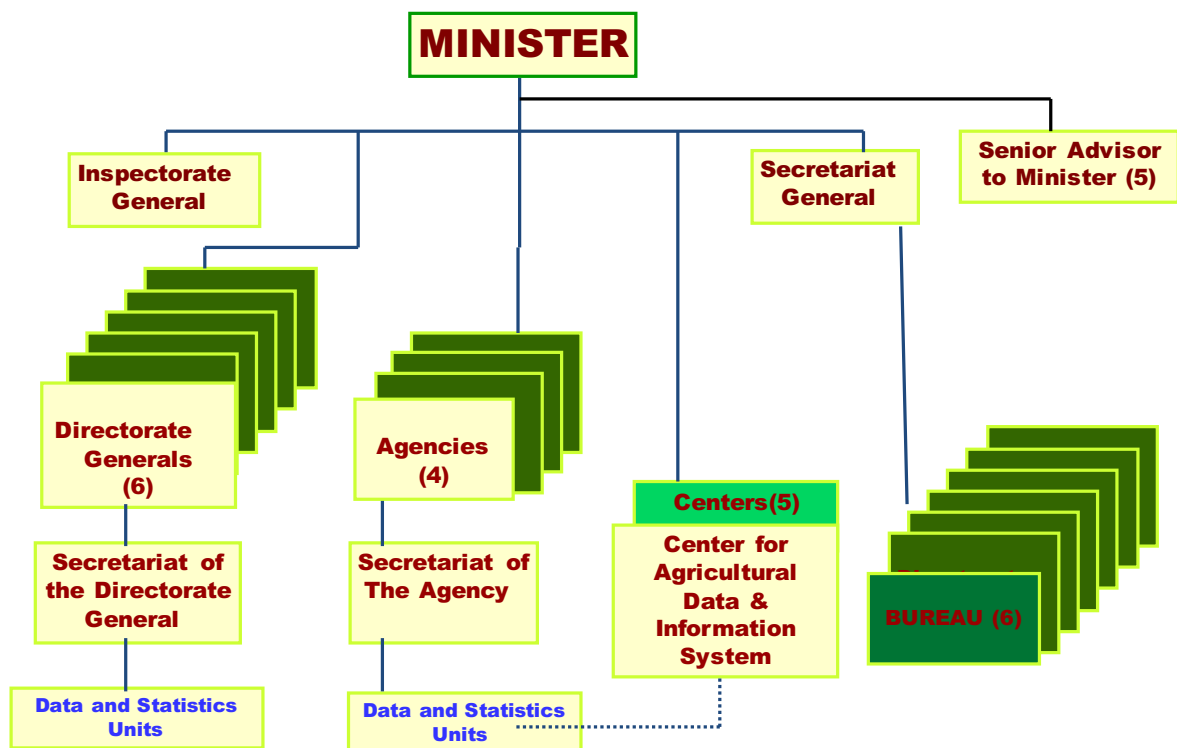
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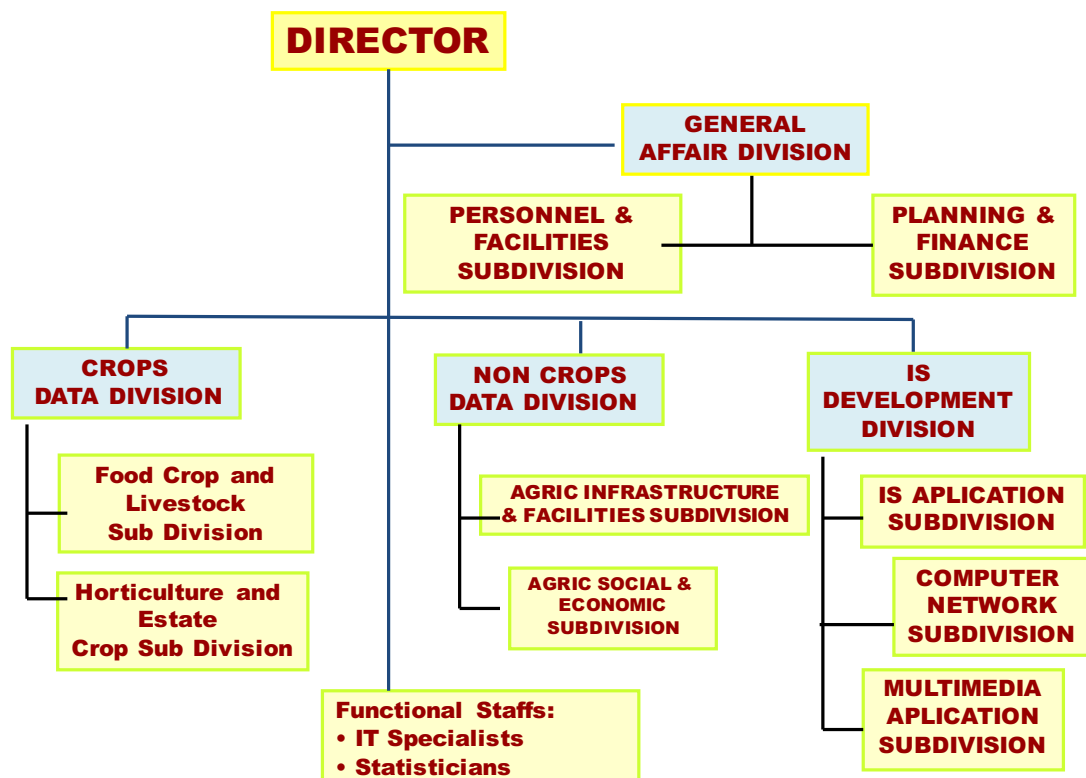
AMIS BALANCE SHEET METHODOLOGY USED IN INDONESIA

Center for Agricultural Data and Information System
Ministry of Agriculture – Republic of Indonesia
Bhutan, 2016

ORGANIZATION OF STATISTICAL SYSTEM WITHIN MOA



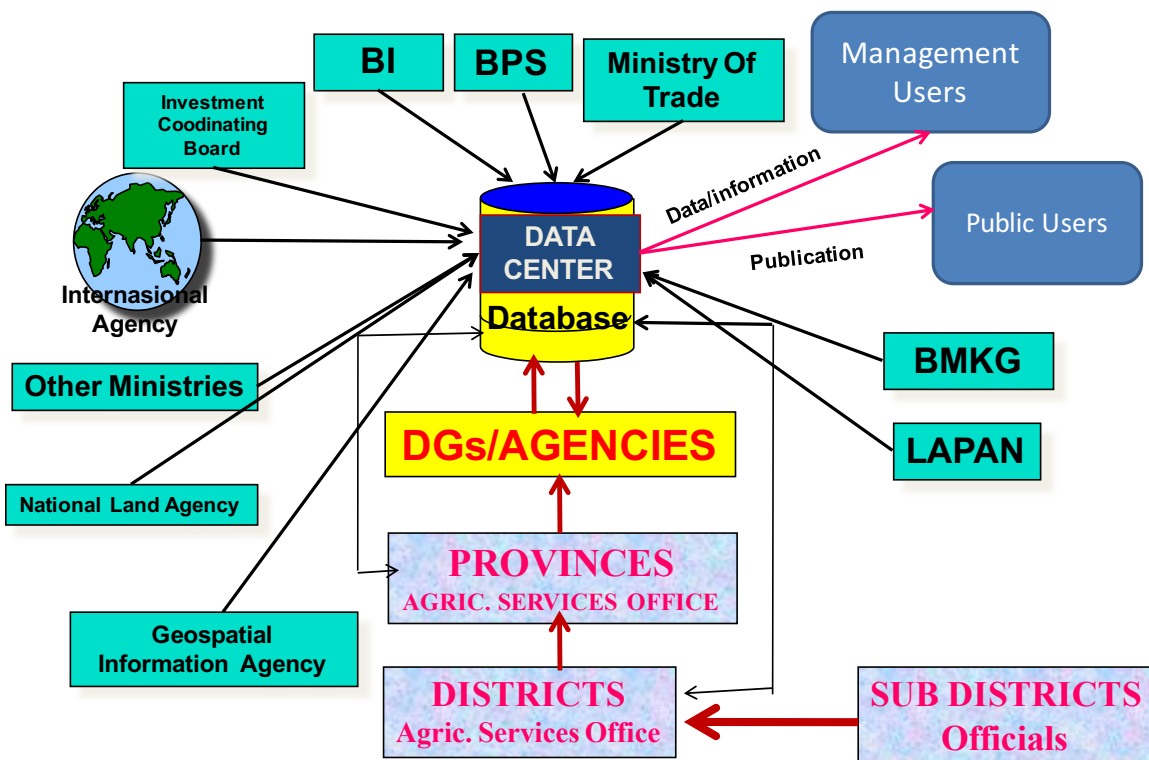
CENTER FOR AGRICULTURAL DATA AND INFORMATION SYSTEMS (CADIS)



TWO MAIN TASKS OF CADIS

- (a) To conduct agricultural statistics and information systems services,
- (b) To conduct capacity building in agricultural statistics and information systems

DATA and INFORMATION FLOW



Balance Sheet Methodology of Indonesia

$$S_0 + P_1 + M_1 = U_1 + X_1 + S_1$$

1. Stock data (S_0 and S_1)
 - Data availability: government stock → Rice
 - Source data: Indonesia Logistic Agency
 - Compiled from Regional Divisions in every provinces
2. Production data = Harvested Area x Productivity
(Paddy, maize, soybean)
 - Harvested area → reported by sub district official monthly (seed use approach, information from village officer, information from farmer, eye estimate, etc).
 - Productivity → survey sampling by BPS-Statistics Indonesia every 4 months (2.5m x 2.5 m crop cutting method)

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3. Export – Import Data
 - Derived from official customs data, and processing by BPS-Statistics Indonesia (monthly): Lag (n-1) months

Commodity	HS Code
Rice	100610,100620,100630,100640 and 1102
Maize	100510, 100590,110220, 110313, 110423, 110812, 151521, and 230210
Wheat	1001 and 1101
Soybean	120100, 120110, 120190, 120810, 150710, 150790 and 230400

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4. Utilization

Utilization	Rice	Maize	Wheat	Soybean
Feed	<ul style="list-style-type: none"> - 0.44% x unhusked rice - 0.17% x rice 	a. Maize consumed by Feed mill industry b. Maize used by breeder (self mixing): calculate based on the proportion of population of layer, native chicken, duck x proportion of maize in dose feeding	-	0.34 % x supply
Seed	Seedling rate	Seedling rate	-	Seedling rate

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3. Utilization

Utilization	Rice	Maize	Wheat	Soybean
Post harvest losses *)	<ul style="list-style-type: none"> • 5.4% of supply of unhusked rice • 2.5% of supply of milled rice 	5% of total supply	0.29% of total supply	5% total supply
Industrial use	Industrial Survey (BPS-Statistics Indonesia)	Survey (BPS-Statistics Indonesia)	Survey (BPS-Statistics Indonesia)	Survey (BPS-Statistics Indonesia)
Food Use	Balancing element	Balancing element	Balancing element	Balancing element

Note: *) conversion rate used since 2002

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FORECASTING TECHNIQUES

Production = Harvested Area x productivity
(3 times a year)

1. First forecast (Released by BPS) : June, based on:

- Harvested area data : Jan-Apr
- Standing crops May → to estimate the harvesting area of May-Aug (regression method)
- Forecast → Sep – Dec (linear trend)

2. Second forecast (Released by BPS) : Nov, based on:

- Harvested area data : Jan – Apr and May - Aug
- Standing crops Sep → to estimate the harvesting area for Sep – Dec (regression method)

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FORECASTING TECHNIQUES .. continue

3. Preliminary Figure

(Released by BPS) - February (t+1), based on:

- Harvested area : Jan – Des
- Still waiting the documents from remote area

Productivity:

• Linear trend for each subround data (every 4 months):

$$Y_{\text{Jan-Apr}} = a_0 + b_1 t + e_1$$

$$Y_{\text{May-Aug}} = a_0 + b_1 t + e_1$$

$$Y_{\text{Sep-Des}} = a_0 + b_1 t + e_1$$

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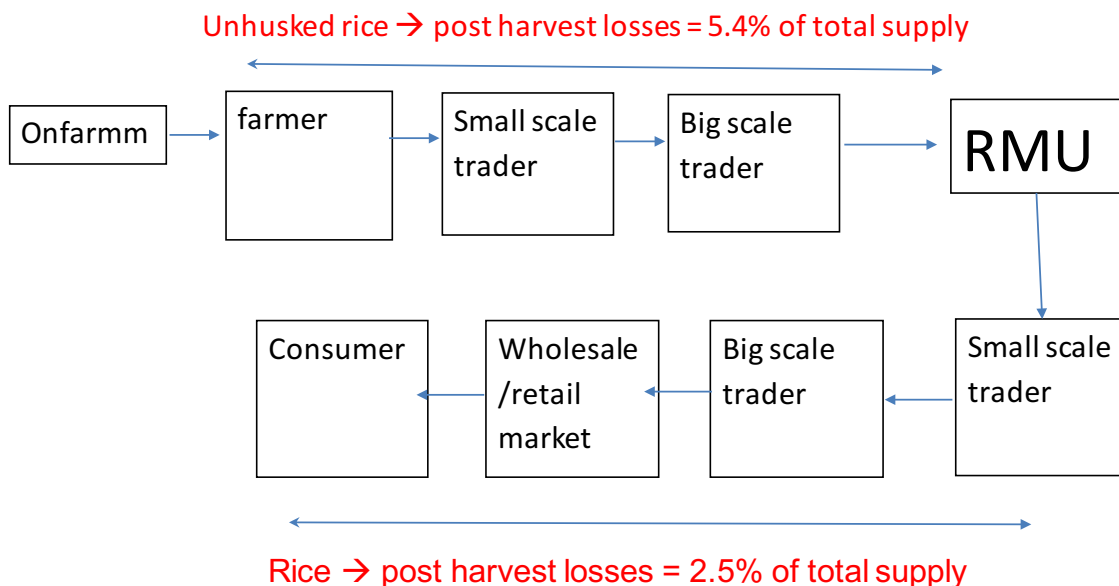
FORECASTING TECHNIQUES ... continue

Trade data

- Availability of trade data : monthly and lag (n-1 months)
- Forecasting method for the unavailable data → univariate model (linear trend, quadratic trend, exponential, smoothing).

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Calculation of post harvest losses



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CALENDAR OF UPDATES

Indonesia will update the AMIS Balance Sheet three times a year (in line with the release of the production figures)

1. February (Preliminary figure for production data)
2. June (First forecast for production data)
3. November (Second forecast figure for production data)

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AMIS COMMODITY BALANCE SHEETS - INDONESIA -



Center for Agricultural Data and Information System
Ministry of Agriculture - The Republic of Indonesia
Bhutan, 2016

RICE



RICE

No	Element	Data Source	Comment
1	Production	BPS	Official fix figure : up to 2014 Official second forecast : 2015
2	Trade data NMY (Jan-Des)	BPS	Official figure: up to Oct 2015 Forecast : Nov + Dec 2015
3	Food	BPS	At home consumption : SUSENAS Out home consumption: estimated based on survey 2012
4	Feed	Fix Coefficient	0.44% of total supply of unhusked rice 0,17% of total supply of rice
5	Seed	BPS – Cost Structure Survey 2013	→seeding rate*planting area Seeding rate = 49.9 kg/ha

No	Element	Data Source	Comment
6	Post Harvest Losses	Fix Coefficient	10% - 16.5 % of total production of paddy 2.5% of total supply of rice
7	Non Food Industry	Fix Coefficient	0.68% of total supply
8	End stock	Survey: Ministry of Trade 2007 (Nov)	Ending stock 2007 → estimate for the stock at the end of December

RICE (Million Tons)


No	Element	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	Flag 14/15	15/16	Flag 15/16
	SUPPLY (Ton)	37.84	38.37	40.31	41.57	42.03	41.98	40.28	40.90	41.82	43.38	45.18	47.40	49.97	51.25	51.65	C	54.23	C
1	Beginning stock	3.69	5.84	5.97	7.18	7.61	7.56	5.43	3.38	3.41	2.43	2.79	3.40	4.73	6.05	6.39	C	6.69	C
2	Production	32.80	31.89	32.54	32.95	34.18	34.22	34.42	36.12	38.13	40.70	41.70	41.26	43.32	44.72	44.45	G	47.05	G
3	Impor (NMY Jan-Des)	1.35	0.64	1.80	1.44	0.24	0.19	0.44	1.40	0.29	0.25	0.69	2.74	1.92	0.47	0.81	G	0.49	G + T
	UTILIZATION (Ton)	37.84	38.37	40.31	41.57	42.03	41.98	40.28	40.90	41.82	43.38	45.18	47.40	49.97	51.25	51.65	C	54.23	C
1	Food Use	26.84	27.84	28.14	28.93	29.60	30.30	30.66	30.89	31.37	31.63	31.84	32.35	32.72	33.34	33.54	C	34.36	C
2	Feed	0.20	0.19	0.20	0.20	0.20	0.20	0.20	0.21	0.22	0.24	0.24	0.24	0.25	0.26	0.26	F	0.27	F
3	Other Uses	4.97	4.37	4.79	4.84	4.66	6.01	6.04	6.35	7.80	8.72	9.69	10.07	10.95	11.25	11.17	C	11.83	C
	- Seed	0.39	0.38	0.38	0.38	0.39	0.39	0.39	0.40	0.41	0.43	0.44	0.44	0.44	0.45	0.43	C	0.47	C
	- Post harvest losses	3.72	3.15	3.55	3.59	3.37	4.73	4.76	5.01	6.03	6.43	7.35	7.32	8.09	8.31	8.27	F	8.74	F
	- Non Food Industry	0.21	0.20	0.21	0.21	0.21	0.20	0.20	0.22	0.22	0.23	0.24	0.25	0.25	0.25	0.25	F	0.27	F
	- Others (unrecorded)	0.66	0.64	0.65	0.66	0.68	0.68	0.69	0.72	1.14	1.63	1.67	2.06	2.17	2.24	2.22	C	2.35	C
4	Export (NMY Jan-Des)	0.00	0.01	0.01	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	G	0.00	G+T
5	End Stock	5.84	5.97	7.18	7.61	7.56	5.43	3.38	3.44	2.43	2.79	3.40	4.73	6.05	6.39	6.69	C+B	7.77	C+B
Other																			
1	Population (000)	206,265	206,265	206,265	206,265	206,265	237,641	237,641	237,641	237,641	237,641	238,519	241,991	245,425	248,818	252,165	G	255,462	G
2	Per capita consumption (kg)	130.10	131.00	128.50	128.20	127.30	127.50	129.00	130.00	132.00	133.10	133.50	133.70	133.30	134.00	133.00	C	134.50	C
3	Planting Area (Ha)	12.38	12.07	12.10	12.06	12.52	12.43	12.38	12.76	12.94	13.53	13.92	13.86	14.15	14.53	13.61	G	14.89	G+T
4	Harvested Area (Million Ha)	11.79	11.50	11.52	11.49	11.92	11.84	11.79	12.15	12.33	12.88	13.25	13.20	13.45	13.84	13.80	G	14.18	G+T

MAIZE



MAIZE

No	Element	Data Source	Comment
1	Production	BPS	Official fix figure : up to 2014 Official second forecast : 2015 Corrected by 13% due to discrepancies of moisture contents
2	Trade data NMY (Jan-Dec)	BPS	Official figures: up to Oct 2015 Forecast : Nov + Dec 2015
3	Food	BPS	At home consumption : SUSENAS Out home consumption: Industrial survey

No	Element	Data Source	Comment
4	• Feed-mill industry	• Association of Feed-mill industry	Annually report
	• Self-mixing breeder	• Calculation	Population of livestock * consumption of maize per animal
5	Seed	BPS-Cost Structure Survey	<ul style="list-style-type: none"> - Hybrid (15 kg/ha) = 56% * total planting area - Composite/local (25 kg/ha) = 44% * total planting area)
6	Post harvest losses	Fix Coefficient	5% of total supply
7	Non food industrial uses	BPS	Industrial Survey
8	Beginning Stock 2011	Estimation	Estimated the amount of maize stored by Feed-mill industry, breeder and food industry 

Calculation of Feed Utilization

No	Type of livestock	% pop.	Specification	Feed
1	Chicken Broiler	100%		Manufactured compound feed
2	Chicken layer	23%	Age < 18 week	Manufactured compound feed
		79%	Age > 18 week	Maize: 48.8 gr/head/day
3	Native chicken	32%	Intensively system	Maize: 48.0 gr/head/day
		68%	Non-intensively system	-
4	Duck	30%	Intensive system	Maize : 34.6 gr/head/day
		70%	Non-intensively system	-

Note: No corn has been used in aqua feed, dairy and beef cattle



MAIZE (Million Tons)

No	Element	11/12	12/13	13/14	14/15	Flag 14/15	15/16	Flag 15/16
	TOTAL SUPPLY	22.19	24.27	25.38	26.44	C	27.34	C
1	Opening Stock	3.63	5.61	6.08	6.72	C	6.82	C
2	Production - 25% moisture content	17.64	19.39	18.51	19.01	G	19.83	G
	Production -15% moisture content	15.35	16.87	16.11	16.54	F	17.25	F
3	Impor - NMY (Jan-Des)	3.21	1.80	3.19	3.18	G	3.26	G + T
	TOTAL UTILIZATION	22.19	24.27	25.38	26.44	C	27.34	C
1	Food	3.65	4.06	3.85	3.92	G	4.07	G
2	Feed	9.00	9.81	10.68	11.43		12.16	
	- Feed mill industry	5.60	6.15	6.90	7.65	S	8.25	S
	- Self mixing breeder	3.40	3.66	3.78	3.78	F	3.91	F
3	Other Uses	3.92	4.28	4.12	4.23	C	4.40	C
	- Seed	0.09	0.08	0.08	0.08	C	0.07	C
	- Post harvest losses	0.88	0.97	0.93	0.95	F	0.99	F
	- Industrial Uses	0.30	0.32	0.34	0.35	F	0.36	F
	- Others	2.65	2.91	2.78	2.85	F	2.97	F
4	Export - NMY (Jan-Des)	0.01	0.03	0.01	0.04	G	0.20	G + T
5	Closing Stock	5.61	6.08	6.72	6.82	B	6.51	B
Other								
1	Population (000)	241,991	245,425	248,818	252,165	G	255,462	G
2	Total consumption (kg/capita)	15.09	16.55	15.47	15.55	C	15.93	C
	- At home	1.38	1.70	1.49	1.38	S	1.33	S
	- Out home (Food industry)	13.71	14.85	13.99	14.17	S	14.60	S
3	Planting area (000 Ha)	4,726	4,166	4,023	3,997	G	3,645	G+T
4	Harvested Area (000 Ha)	3,865	3,958	3,822	3,837	G	3,860	G+T

Soybean



SOYBEAN

No	Element	Data Source	Comment
1	Production	BPS	Official fix figure : up to 2014 Official second forecast : 2015
2	Trade data (NMY: Oct-Sep)	BPS	Official figures: up to Oct 2015 Forecast : (Nov + Dec 2015) and (Jan-Sep 2016)
3	Food	BPS	At home consumption : SUSENAS Out home consumption: Industrial survey

No	Element	Data Source	Comment
4	Feed	Fix coefficient	0.34% of total supply
5	Seed	BPS-Cost Structure Survey	Seeding rate = 63.35 kg/ha
6	Post harvest losses	Fix Coefficient (Survey 2002)	5% of total supply
7	Industrial uses (no crush)	BPS	Industrial Survey – non food
8	Beginning stock of 2011	Estimation	Estimated the amount of soybean stored by the small scale food industry for 2 months needs

SOYBEAN (Million Tons)

No	Element	11/12	12/13	13/14	14/15	Flag 14/15	15/16	Flag 15/16
	TOTAL SUPPLY	3.64	3.50	3.81	3.90	C	3.84	C
1	Opening Stock	0.41	0.86	0.80	0.94	C	0.94	C
2	Production (Ton)	0.85	0.84	0.78	0.95	G	0.98	G
3	Impor - NMY (Oct-Sep)	2.38	1.80	2.24	2.01	G	1.91	G+ T
	TOTAL UTILIZATION	3.64	3.50	3.81	3.90	C	3.84	C
1	Food	2.44	2.34	2.39	2.48	C	2.49	C
2	Feed	0.01	0.01	0.01	0.01	F	0.01	F
3	Other Uses	0.33	0.35	0.43	0.46	C	0.53	C
	- Seed	0.04	0.04	0.04	0.04	C	0.04	C
	- Post harvest losses	0.18	0.17	0.19	0.20	F	0.19	F
	- Crush*)	0.11	0.13	0.20	0.23	G	0.30	G
4	Export - NMY (Oct-Sep)	0.00	0.00	0.04	0.00	G	0.00	G+T
5	Closing Stock	0.86	0.80	0.94	0.94	B	0.80	B
Other								
1	Population (000)	241,991	245,425	248,818	252,165	G	255,462	G
2	Total consumption (kg/capita)	10.08	9.54	9.62	9.84	C	9.74	C
	- At home	7.56	7.12	7.15	7.13	G	7.02	G
	- Out home (Food industry)	2.53	2.42	2.47	2.71	G	2.72	G
3	Planting area (Million Ha)	0.59	0.60	0.58	0.65	G	0.67	G+T
4	Harvest area (Million Ha)	0.62	0.57	0.55	0.62	G	0.62	G+T

Note: *) Crush is industrial uses for non-food product

WHEAT

No	Element	Data Source	Comment
1	Production	-	-
2	Trade data NMY: Apr-Mar	BPS	Official figures: up to Oct 2015 Forecast : (Nov + Dec 2015) and (Jan-Mar 2016) 'Flour→Grain'= 1.316%
3	Food	Association of Wheat Flour Producer	
4	Seed	-	-
5	Post Harvest losses	Fix coefficient	0.29% * total supply
6	Industrial uses	BPS	Industrial Survey
7	Beginning stock of 2011	Estimated	Estimated the amount of wheat stored by food industry

Wheat (Million Tons)

No	Element	11/12	12/13	13/14	14/15	Flag 14/15	15/16	Flag 15/16
	TOTAL SUPPLY	7.01	8.09	8.45	9.11	C	9.18	C
1	Opening Stock	0.45	0.80	1.32	1.35	C	1.53	C
2	Production (Ton)	0	0	0	0		0	
3	Impor - NMY (Apr-Mar)	6.56	7.29	7.13	7.76	G	7.65	G + T
	TOTAL UTILIZATION	7.01	8.09	8.45	9.11		9.18	C
1	Food	5.37	5.83	6.09	6.48	C	6.98	C
2	Feed	0	0	0	0		0	
3	Other Uses	0.79	0.89	0.91	1.00	C	1.01	C
	- Seed	0	0	0	0		0	
	- Post harvest losses	0.02	0.02	0.02	0.03	F	0.03	F
	- Industrial Uses	0.07	0.05	0.04	0.06	G	0.06	G
	- Others	0.70	0.81	0.84	0.91	C	0.92	C
4	Export - NMY (Apr-Mar)	0.05	0.06	0.10	0.10	G	0.11	G + T
5	Closing Stock	0.80	1.32	1.35	1.53	B	1.09	B
Other:								
1	Population (000)	241,991	245,425	248,818	252,165	G	255,462	G
2	Per capita consumption (kg)	22.20	23.74	24.46	25.68	O	27.92	O

INDONESIAN EXPORTS OF WHEAT FLOUR BASED PRODUCTS

(MT)

No	HS	Description	2013	2014	2015*)
1	1902.30.40.00	instant noodles	103,950	116,222	75,251
2	1902.30.90.00	Other stuffed pasta	16,953	10,476	6,252
3	1905.10.00.00	Crispbread	665	707	429
4	1905.31.10.00	Sweet biscuits not containing cocoa	36,952	35,079	24,400
5	1905.31.20.00	Sweet biscuits containing cocoa	27,668	31,868	23,012
6	1905.32.00.00	Waffles and wafers	32,765	43,920	38,711
7	1905.40.90.00	Rusks, toasted bread & similar toasted products	367	759	237
8	1905.90.10.00	Unsweetened teething biscuits	3,560	3,381	2,221
9	1905.90.20.00	Other unsweetened biscuits	907	501	559
10	1905.90.30.00	Cakes	119	131	104
11	1905.90.40.00	Pastries	161	228	434
12	1905.90.70.00	Communion wafers, sealing wafers	55	71	144
13	1905.90.80.00	Other crisp savoury food products	1,606	2,458	1,749
14	1905.90.90.00	Other baker wares	8,429	10,397	6,250
		Total	234,156	256,201	179,751

Note : *) data up to October 2015

IMPROVEMENT

Previous

Current



Commodities		Element	Previous	Current
RICE		Food	Residual	Estimated total consumption (at + out) home
		Stock	Available only government stock	Estimated total beginning stock (government + private)
MAIZE		Food	Residual	Estimated total consumption (at + out) home
		Feed	Only for feed-mill industry	<ul style="list-style-type: none"> • Feed-mill industry • Self-mixing breeder
		Stock	No data	Estimated beginning stock
SOYBEAN	WHEAT	Food	Residual	Estimated consumption (at + out) home
		Stock	No data	Estimated beginning stock

FOLLOW UP

- Conduct the discussion of the CBS with all related colleagues.
- Conduct the discussion of the production correction figure.
- Need to conduct regular survey of out home consumption
- Need to conduct regular survey of stock – survey should be conducted on the end of National Marketing Year
- Need to conduct the post harvest losses survey

Thank you