

Report Card on Carbon Footprints due to Breastmilk Substitutes (BMS)

Breastfeeding is a sustainable and natural source of food and nutrition. On the other hand, industrially manufactured Breastmilk Substitutes are made from dairy and other agricultural products, which generate greenhouse gases (GHG) including methane and nitrous oxide during production, transport and use. Their use also generates a sizable volume of waste, which needs disposal. **GreenFeeding** is a call to make feeding decisions that have dual benefits i.e. practicing breastfeeding which is a natural and sustainable source of food and nutrition for infants and young children (and contributes to achieving global nutrition targets), as well as avoiding BMS and helping conserve the natural environment.

However, the use of milk formula is increasingly driven by sub-optimal implementation of policies and programmes, particularly regulation of marketing of commercial baby foods to enhance optimal breastfeeding practices.

This report-card provides estimates of GHG emissions arising from BMS sale in China. This is set alongside assessment of the implementation of policies and programmes on infant and young child feeding in the country and some suggested actions to improve the situation.

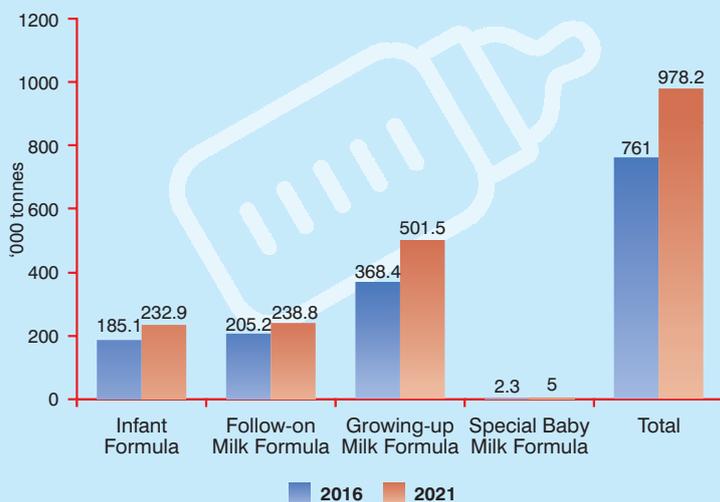


Estimating GHG emissions due to BMS

This report card has used the method developed by IBFAN Asia to estimate the GHG emission [kg CO₂ eq. emissions, that is, the GHG amount that would have the same global warming potential as a kilogram of carbon dioxide gas (CO₂)] per kg of BMS sold. It took into account the GHG emissions due to constituents of BMS like milk powder, vegetable oils and sugars, as found from a literature review. Proportions of ingredients in various BMS products were calculated using Codex Alimentarius guidance on macronutrient composition. Published industry data from Euromonitor International for milk formula sales provided data on volumes of milk formula sold in the country.

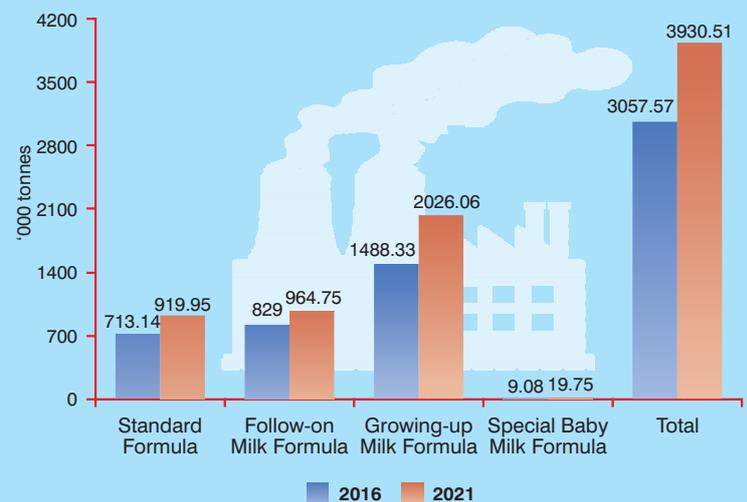
Estimated GHG emissions per kg of BMS ranged from 3.95 kg CO₂ eq. for standard infant formula and special baby milk formula and 4.04 kg CO₂ eq. for follow-up formula and growing up milks.¹

Sales of BMS in 2016 and projected sales in 2021 ('000 Tonnes)²



- In 2016, total sale of BMS in China was 761,000 tonnes, out of which 368,400 tonnes was growing up milks, 205,200 tonnes was follow-up formula and 185,100 tonnes was infant formula. special baby milk formula was only 2300 tonnes.
- Total projected sale of BMS in China in 2021 is 978,200 tonnes out of which 501,500 tonnes is growing up milk, 238,800 tonnes is follow-up formula, 232,900 tonnes is infant formula and 5000 tonnes is special baby milk formula.
- Projections show that there will be about a 28% increase in the overall sales of BMS, with an increase in the sales of all categories of BMS substantially by 2021.

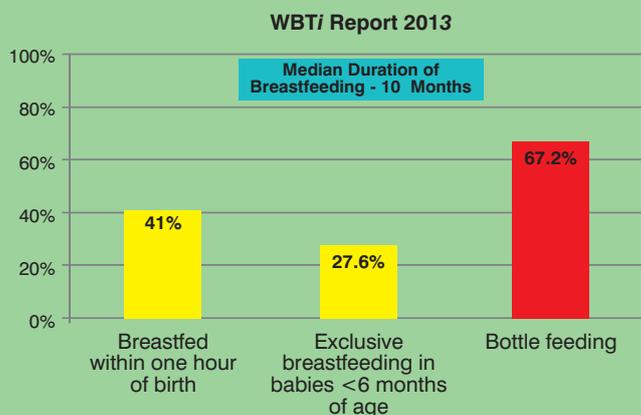
GHG Emissions due to BMS in 2016 and projected emissions in 2021 ('000 Tonnes CO₂ eq.)^{1,2}



- Total GHG emissions due to BMS in 2016 was 30,57,570 tonnes of CO₂ eq. out of which 14,88,330 tonnes was due to growing up milks, 829,000 tonnes was due to follow up formula and 731,140 tonnes was due to infant formula.
- Projected total GHG emissions in 2021 due to BMS is 39,30,510 tonnes of CO₂ eq., With the maximum contribution coming from the growing up milks.

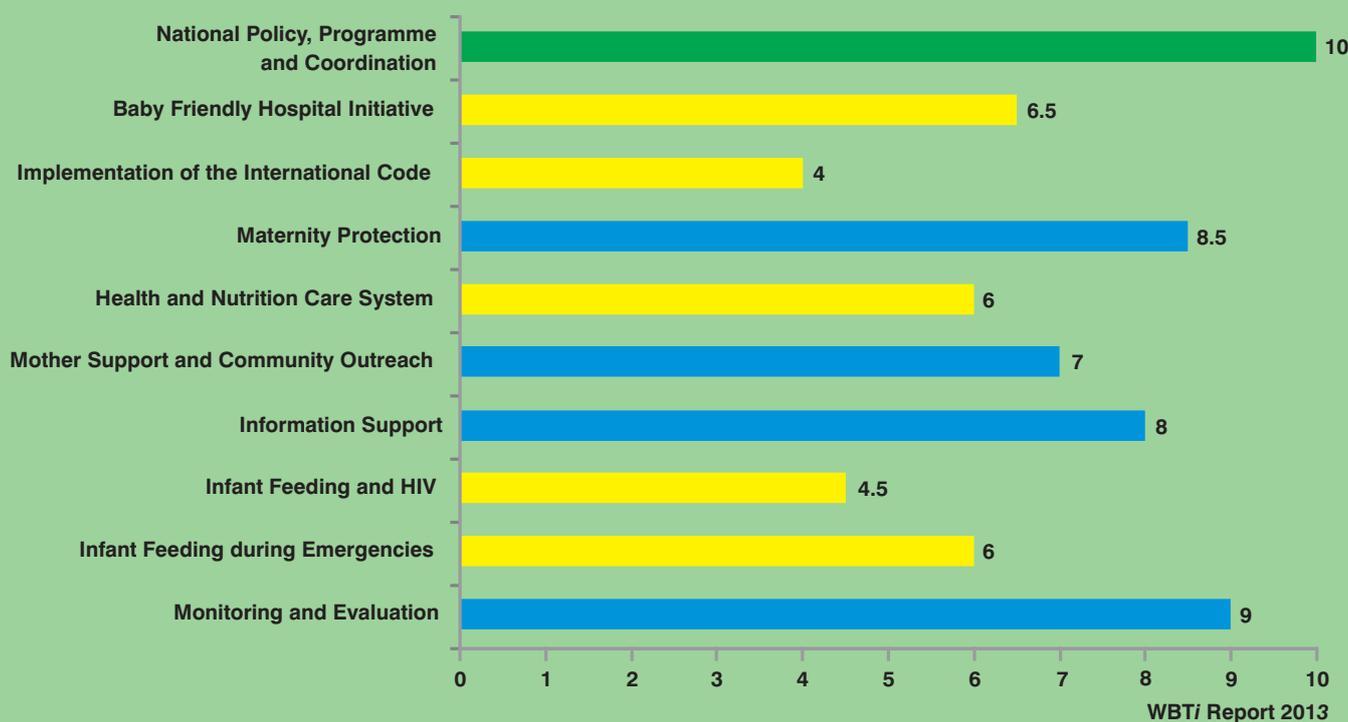
IYCF Practices³

A high bottle feeding rate of 67.2%, a low rate of early initiation and exclusive breastfeeding < 6 months and coupled with a median duration of breastfeeding of 10 months need immediate attention. It shows that BMS are introduced early and they replace breastfeeding during the infancy and in the second year of life.



Policies and Programmes on IYCF³

To enhance breastfeeding rates and to restrict use of BMS, strengthening of policies and programmes on IYCF is required. WBTi assessment 2013 has revealed many gaps in policies and programmes on IYCF.



- Effective policies and programmes are required to improve breastfeeding practices in hospitals and communities, safe infant feeding practices in HIV and safe infant feeding practices during emergencies.
- More importantly there is a need for effective implementation of the International Code of Marketing of Breastmilk Substitutes⁴ by:
 - Strengthening the Code legislation by including all provisions of the Code and subsequent WHA resolutions in the national law.
 - Establishing Code monitoring mechanisms which are independent and transparent, free from commercial influence and empowered to impose legal sanctions.

1. Dadhich JP, Smith J, Iellamo A, Suleiman A. Report on carbon footprints due to milk formula: a study from selected countries of the Asia-Pacific Region. Delhi: BPNI/IBFAN Asia; 2016.

2. Euromonitor International (2016). Passport-Baby Food in China

3. WBTi report of China 2013. <http://www.worldbreastfeedingtrends.org/GenerateReports/countrysubmit.php?country=CN>

4. WHO, UNICEF, IBFAN. Marketing of breast-milk substitutes: national implementation of the international code: status report 2016

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Contribution of Dr. Julie Smith, Naomi Hull, Dr. Neelima Thakur and Nupur Bidla in developing this report card is thankfully acknowledged.

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Report Card on Carbon Footprints due to Breastmilk Substitutes (BMS)

Breastfeeding is a sustainable and natural source of food and nutrition. On the other hand, industrially manufactured Breastmilk Substitutes are made from dairy and other agricultural products, which generate greenhouse gases (GHG) including methane and nitrous oxide during production, transport and use. Their use also generates a sizable volume of waste, which needs disposal. **GreenFeeding** is a call to make feeding decisions that have dual benefits i.e. practicing breastfeeding which is a natural and sustainable source of food and nutrition for infants and young children (and contributes to achieving global nutrition targets), as well as avoiding BMS and helping conserve the natural environment.

However, the use of milk formula is increasingly driven by sub-optimal implementation of policies and programmes, particularly regulation of marketing of commercial baby foods to enhance optimal breastfeeding practices.

This report-card provides estimates of GHG emissions arising from BMS sale in India. This is set alongside assessment of the implementation of policies and programmes on infant and young child feeding in the country and some suggested actions to improve the situation.

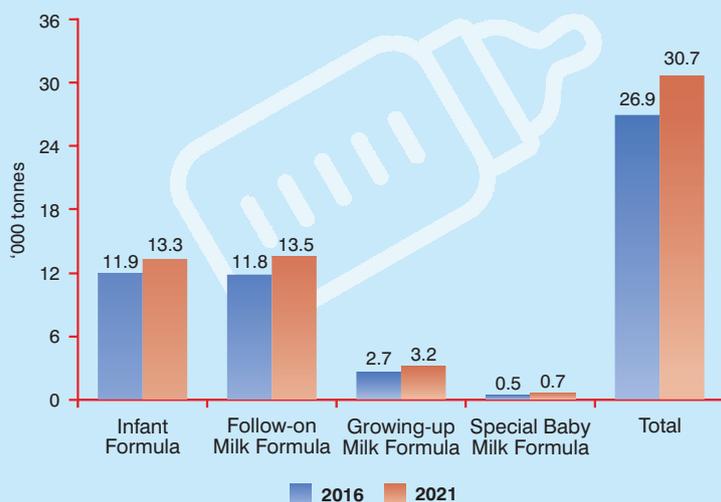


Estimating GHG emissions due to BMS

This report card has used the method developed by IBFAN Asia to estimate the GHG emission [kg CO₂ eq. emissions, that is, the GHG amount that would have the same global warming potential as a kilogram of carbon dioxide gas (CO₂)] per kg of BMS sold. It took into account the GHG emissions due to constituents of BMS like milk powder, vegetable oils and sugars, as found from a literature review. Proportions of ingredients in various BMS products were calculated using Codex Alimentarius guidance on macronutrient composition. Published industry data from Euromonitor International for milk formula sales provided data on volumes of milk formula sold in the country.

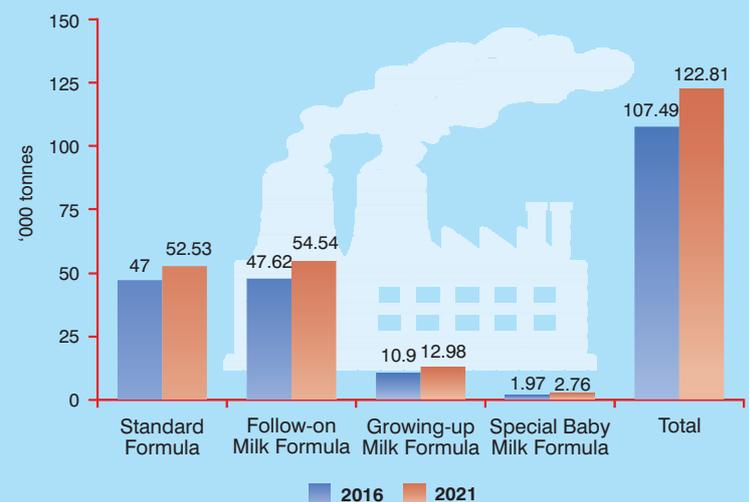
Estimated GHG emissions per kg of BMS ranged from 3.95 kg CO₂ eq. for standard infant formula and special baby milk formula and 4.04 kg CO₂ eq. for follow-up formula and growing up milks.¹

Sales of BMS in 2016 and projected sales in 2021 ('000 Tonnes)²



- In 2016, total sale of BMS in India was 26,900 tonnes, out of which 2,700 tonnes was growing up milks, 11,800 tonnes was follow-up formula, 11,900 tonnes was standard infant formula and 500 tonnes was special baby milk formula.
- Total projected sale of BMS in India in 2021 is 30,700 tonnes out of which 3,200 tonnes is growing up milk, 13,500 tonnes is follow-up formula, 13,300 tonnes is standard infant formula and 700 tonnes is special baby milk formula.
- Projections show that there will be about 14% increase in the sale of BMS between 2016 and 2021.

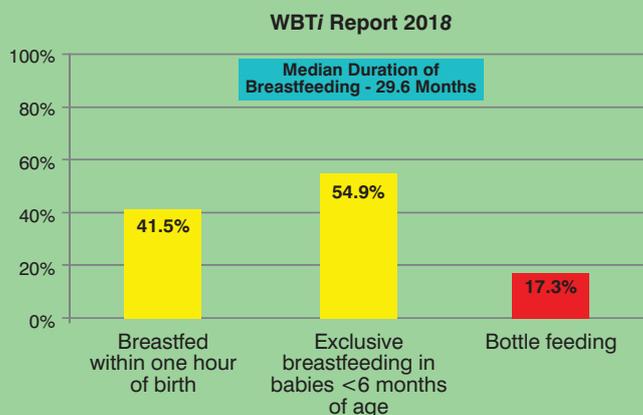
GHG Emissions due to BMS in 2016 and projected emissions in 2021 ('000 Tonnes CO₂ eq.)^{1,2}



- Total GHG emissions due to BMS in 2016 was 107,490 tonnes of CO₂ eq. out of which 10,900 tonnes was due to growing up milks, 47,000 tonnes was due to standard formula, 47,620 tonnes was due to follow up formula, and 1,970 tonnes was due to special baby milk formula.
- Projected total GHG emissions in 2021 due to BMS is 122,810 tonnes of CO₂ eq., maximum contribution to it will come from the follow-up formula.

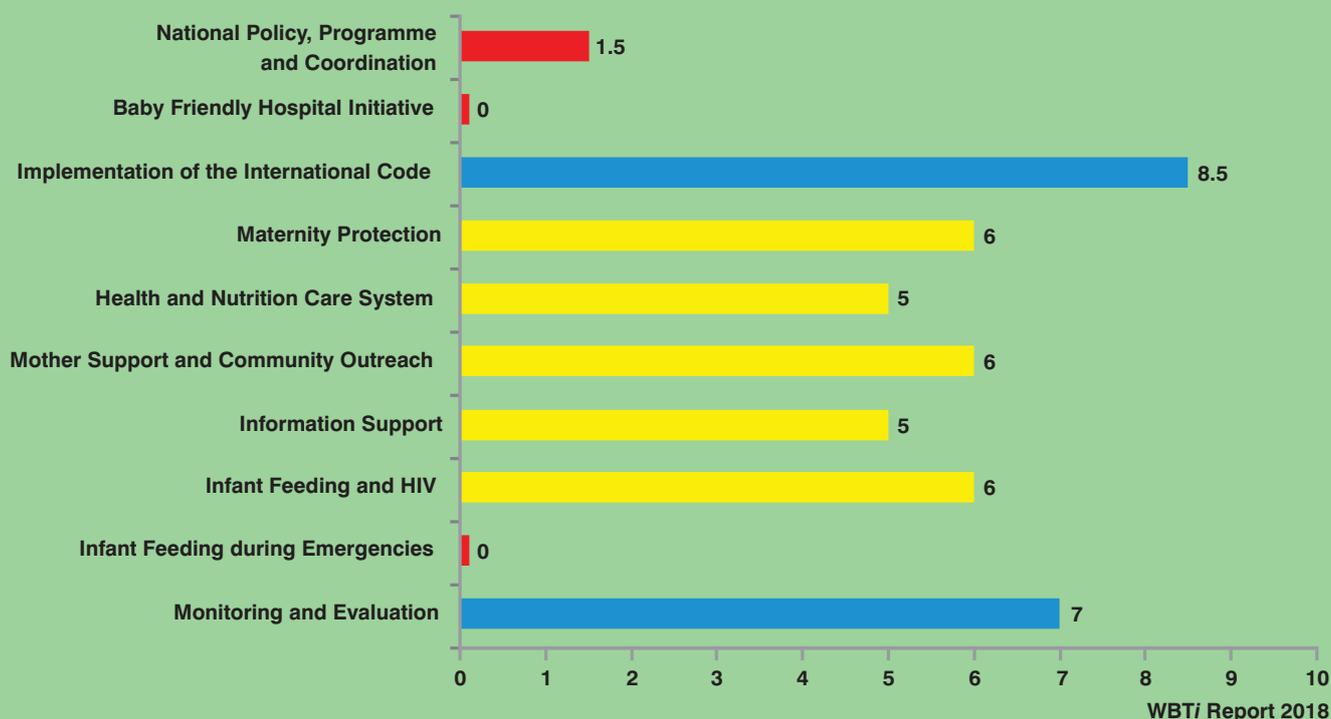
IYCF Practices

A high bottle feeding rate of 17.3%, a low early initiation of breastfeeding and exclusive breastfeeding rate (< 6 months) of 54.9% need immediate attention. It shows that BMS are introduced early and they replace breastfeeding during the infancy and in the second year of life.



Policies and Programmes on IYCF³

To enhance breastfeeding rates and to restrict use of BMS, strengthening of policies and programmes on IYCF is required. WBTi assessment 2018 has revealed many gaps in policies and programmes on IYCF.



- There is a need to have a robust national IYCF policy, effective programme to improve breastfeeding practices in hospitals, enhanced maternity protection, effective policy and programmes on IYCF during emergencies and effective policies and programmes on HIV and infant feeding.
- More importantly there is a need for effective implementation of the International Code of Marketing of Breastmilk Substitutes (national legislation the IMS Act)⁴ by establishing monitoring mechanisms which are independent and transparent and free from commercial influence.

1. Dadhich JP, Smith J, Iellamo A, Suleiman A. Report on carbon footprints due to milk formula: a study from selected countries of the Asia-Pacific Region. Delhi: BPNI/IBFAN Asia; 2016.
 2. Euromonitor International (2016). Passport-Baby Food in India
 3. WBTi report of India 2018. <http://worldbreastfeedingtrends.org/GenerateReports/countrysubmit.php?country=IN>
 4. [http://www.searo.who.int/thailand/news/control-marketing-of-infant-and-young-child-food-act\(2017\).pdf](http://www.searo.who.int/thailand/news/control-marketing-of-infant-and-young-child-food-act(2017).pdf)

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Report Card on Carbon Footprints due to Breastmilk Substitutes (BMS)

Breastfeeding is a sustainable and natural source of food and nutrition. On the other hand, industrially manufactured Breastmilk Substitutes are made from dairy and other agricultural products, which generate greenhouse gases (GHG) including methane and Nitrous Oxide during production, transport and use. Their use also generates a sizable volume of waste, which needs disposal. **GreenFeeding** is a call to make feeding decisions that have dual benefits i.e. practicing breastfeeding which is a natural and sustainable source of food and nutrition for infants and young children (and contributes to achieving global nutrition targets), as well as avoiding BMS and helping conserve the natural environment.

However, the use of milk formula is increasingly driven by sub-optimal implementation of policies and programmes, particularly regulation of marketing of commercial baby foods to enhance optimal breastfeeding practices.

This report-card provides estimates of GHG emissions arising from BMS sale in Indonesia. This is set alongside assessment of the implementation of policies and programmes on Infant and young child feeding in the country and some suggested actions to improve the situation.

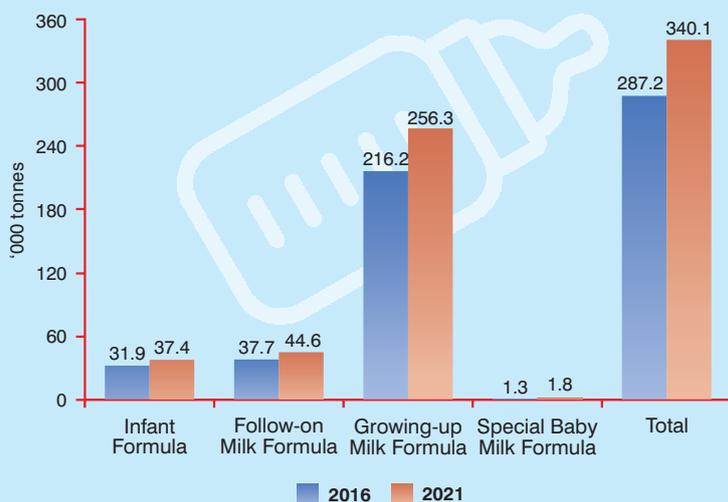


Estimating GHG emissions due to BMS

This report card has used the method developed by IBFAN Asia to estimate the GHG emission [kg CO₂ eq. emissions, that is, the GHG amount that would have the same global warming potential as a kilogram of carbon dioxide gas (CO₂)] per kg of BMS sold. It took into account the GHG emissions due to constituents of BMS like milk powder, vegetable oils and sugars, as found from a literature review. Proportions of ingredients in various BMS products were calculated using Codex Alimentarius guidance on macronutrient composition. Published industry data from Euromonitor International for milk formula sales provided data on volumes of milk formula sold in the country.

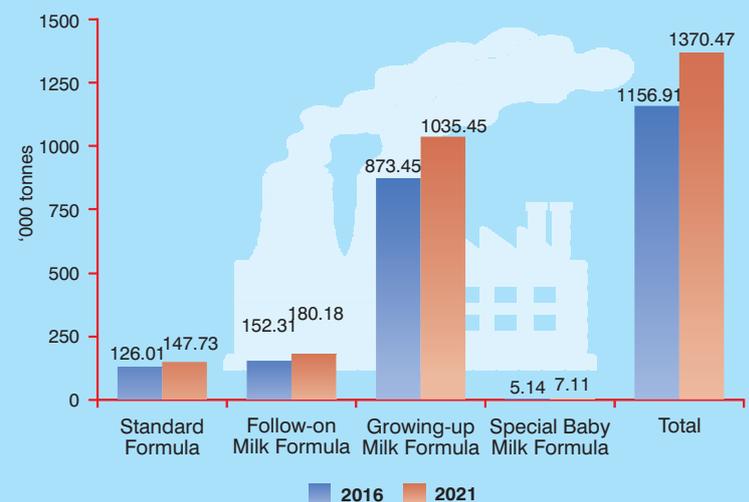
Estimated GHG emissions per kg of BMS ranged from 3.95 kg CO₂ eq. for standard infant formula and special baby milk formula and 4.04 kg CO₂ eq. for follow-up formula and growing up milks.¹

Sales of BMS in 2016 and projected sales in 2021 ('000 Tonnes)²



- In 2016, total sale of BMS in Indonesia was 287,100 tonnes, out of which 216,200 tonnes was growing up milks, 37,700 tonnes was follow-up formula, 31,900 tonnes was standard infant formula and 1300 tonnes was special baby milk formula.
- Total projected sale of BMS in Indonesia in 2021 is 340,100 tonnes out of which 256,300 tonnes is growing up milk, 44,600 tonnes is follow-up formula, 37,400 tonnes is standard infant formula and 1800 tonnes is special baby milk formula.
- Projections show that sale of all categories of BMS will increase substantially by 2021.

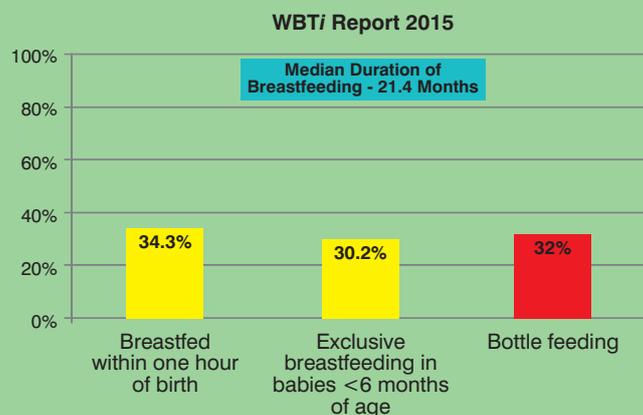
GHG Emissions due to BMS in 2016 and projected emissions in 2021 ('000 Tonnes CO₂ eq.)^{1,2}



- Total GHG emissions due to BMS in 2016 was 1,156,910 tonnes of CO₂ eq. out of which 873,450 tonnes was due to growing up milks, 126,010 tonnes was due to standard milks, 152,310 tonnes was due to follow up formula, and 5140 tonnes was due to special baby milk formula.
- Projected total GHG emissions in 2021 due to BMS is 1,370,470 tonnes, maximum contribution to it will come from the growing up milks.

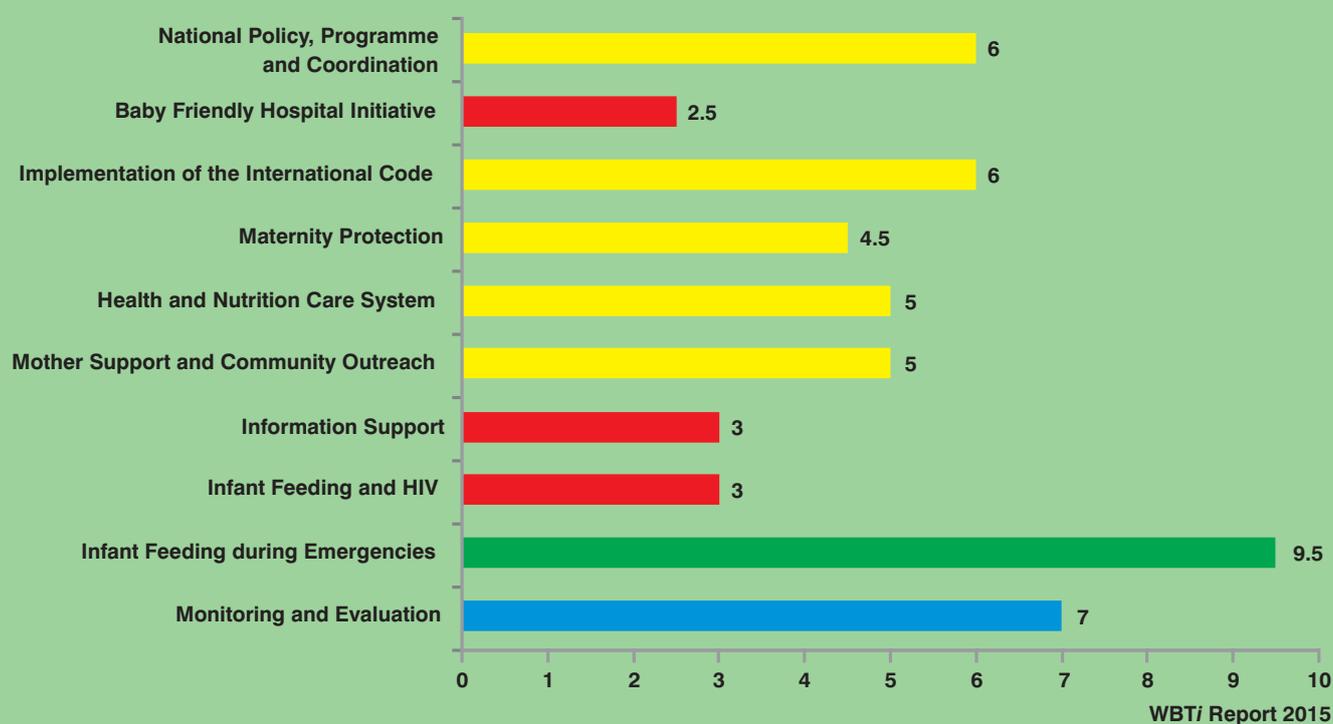
IYCF Practices

A high bottle feeding rate of 32%, coupled with a low early initiation of breastfeeding and exclusive breastfeeding < 6 months along need immediate attention. It shows that BMS are introduced early and they replace breastfeeding during the infancy and in the second year of life.



Policies and Programmes on IYCF³

To enhance breastfeeding rates and to restrict use of BMS, strengthening of policies and programmes on IYCF is required. WBTi assessment 2015 has revealed many gaps in policies and programmes on IYCF.



- There is a need to have a robust national IYCF policy, effective programme to improve breastfeeding practices in hospitals, appropriate IEC policy, enhanced maternity protection, effective policies and programmes on HIV and infant feeding, better maternity protection and access to IYCF counselling in the community.
- More importantly there is a need for effective implementation of the International Code of Marketing of Breastmilk Substitutes⁴ by:
 - Strengthening the national legislation by incorporating all the provisions of the Code in it.
 - Establishing International Code monitoring mechanisms which are independent and transparent and free from Commercial influence.

1. Dadhich JP, Smith J, Iellamo A, Suleiman A. Report on carbon footprints due to milk formula: a study from selected countries of the Asia-Pacific Region. Delhi: BPNI/IBFAN Asia; 2016.

2. Euromonitor International (2016). Passport-Baby Food in Indonesia

3. WBTi report of Indonesia. 2015. <http://www.worldbreastfeedingtrends.org/GenerateReports/countrysubmit.php?country=ID>

4. WHO, UNICEF, IBFAN. Marketing of breast-milk substitutes: national implementation of the international code: status report 2016

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Report Card on Carbon Footprints due to Breastmilk Substitutes (BMS)

Breastfeeding is a sustainable and natural source of food and nutrition. On the other hand, industrially manufactured Breastmilk Substitutes are made from dairy and other agricultural products, which generate greenhouse gases (GHG) including methane and nitrous oxide during production, transport and use. Their use also generates a sizable volume of waste, which needs disposal. **GreenFeeding** is a call to make feeding decisions that have dual benefits i.e. practicing breastfeeding which is a natural and sustainable source of food and nutrition for infants and young children (and contributes to achieving global nutrition targets), as well as avoiding BMS and helping conserve the natural environment.

However, the use of milk formula is increasingly driven by sub-optimal implementation of policies and programmes, particularly regulation of marketing of commercial baby foods to enhance optimal breastfeeding practices.

This report-card provides estimates of GHG emissions arising from BMS sale in Malaysia. This is set alongside assessment of the implementation of policies and programmes on infant and young child feeding in the country and some suggested actions to improve the situation.

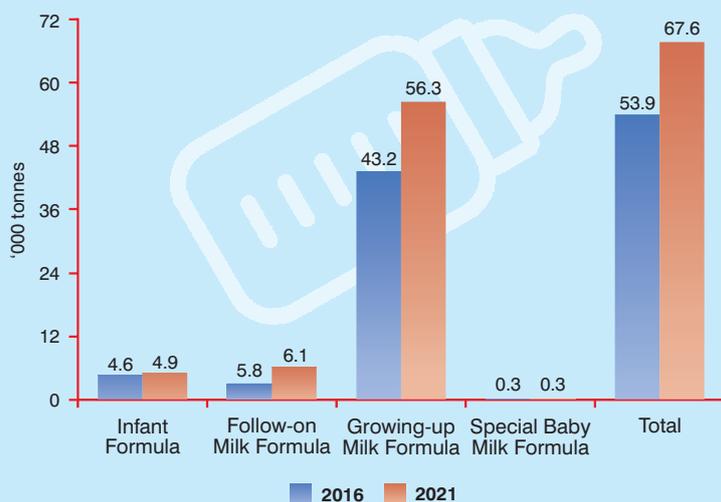


Estimating GHG emissions due to BMS

This report card has used the method developed by IBFAN Asia to estimate the GHG emission [kg CO₂ eq. emissions, that is, the GHG amount that would have the same global warming potential as a kilogram of carbon dioxide gas (CO₂)] per kg of BMS sold. It took into account the GHG emissions due to constituents of BMS like milk powder, vegetable oils and sugars, as found from a literature review. Proportions of ingredients in various BMS products were calculated using Codex Alimentarius guidance on macronutrient composition. Published industry data from Euromonitor International for milk formula sales provided data on volumes of milk formula sold in the country.

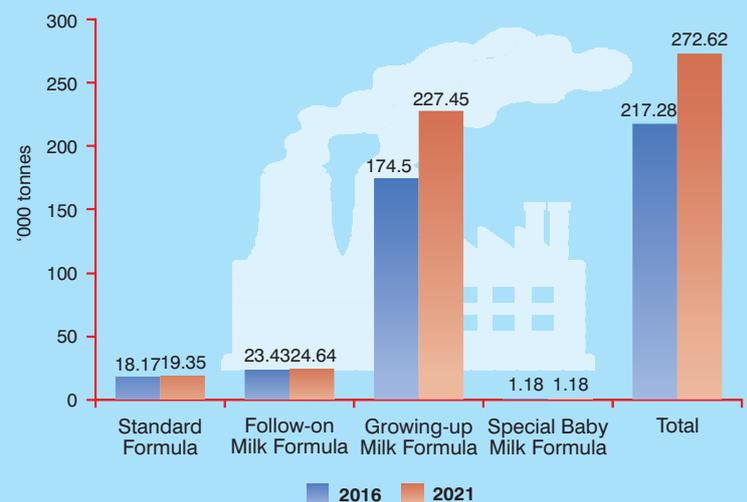
Estimated GHG emissions per kg of BMS ranged from 3.95 kg CO₂ eq. for standard infant formula and special baby milk formula and 4.04 kg CO₂ eq. for follow-up formula and growing up milks.¹

Sales of BMS in 2016 and projected sales in 2021 ('000 Tonnes)²



- In 2016, total sale of BMS in Malaysia was 53,900 tonnes, out of which 43,200 tonnes was growing up milks, 5,800 tonnes was follow-up formula, 4,600 tonnes was standard infant formula and 300 tonnes was special baby milk formula.
- Total projected sale of BMS in Malaysia in 2021 is 67,600 tonnes out of which 56,300 tonnes is growing up milk, 6,100 tonnes is follow-up formula, 4,900 tonnes is standard infant formula and 300 tonnes is special baby milk formula.
- Projections show that sale of all categories of BMS except the special baby milk formula will increase substantially by 2021.

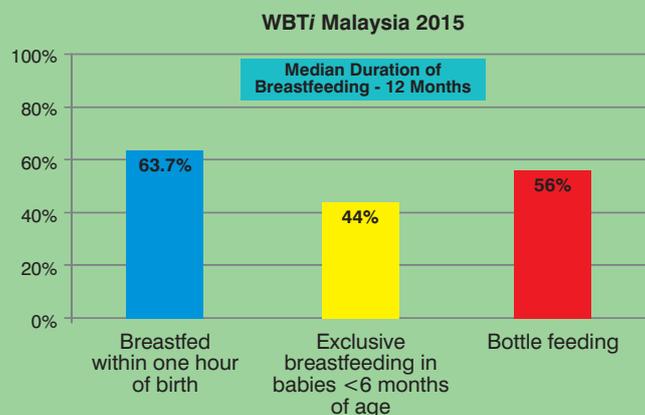
GHG Emissions due to BMS in 2016 and projected emissions in 2021 ('000 Tonnes CO₂ eq.)^{1,2}



- Total GHG emissions due to BMS in 2016 was 217,280 tonnes of CO₂ eq. out of which 174,500 tonnes was due to growing up milks, 18,170 tonnes was due to standard formula, 23,430 tonnes was due to follow up formula, and 1,180 tonnes was due to special baby milk formula.
- Projected total GHG emissions in 2021 due to BMS is 272,620 tonnes of CO₂ eq., maximum contribution to it will come from the growing up milks.

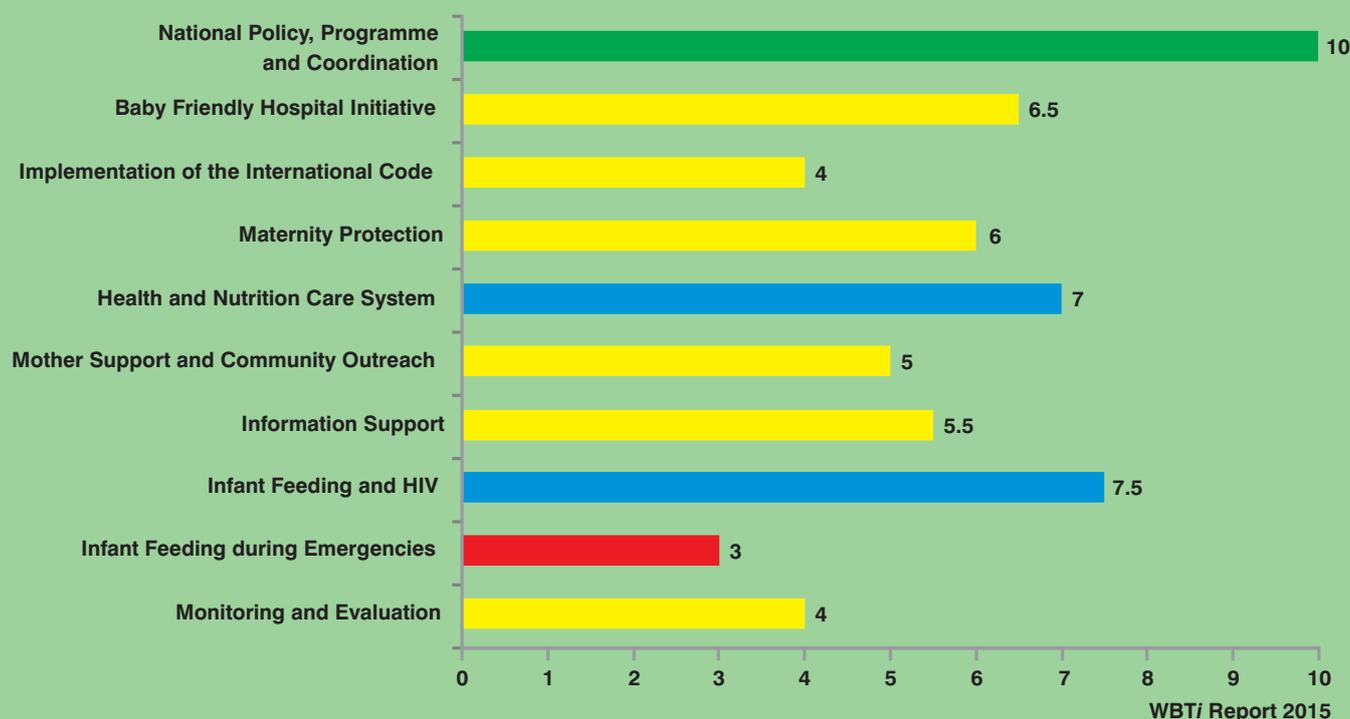
IYCF Practices

A high bottle feeding rate of 56% coupled with a low exclusive breastfeeding < 6 months along with a median duration of breastfeeding at 12 months need immediate attention. It shows that BMS are introduced early and they replace breastfeeding during the infancy and in the second year Of life.



Policies and Programmes on IYCF³

To enhance breastfeeding rates and to restrict use of BMS, strengthening of policies and programmes on IYCF is required. WBTi assessment 2015 has revealed many gaps in policies and programmes on IYCF.



- There is a need to have an effective programme to improve breastfeeding practices in hospitals, enhanced maternity protection, appropriate IEC policy, effective policy and programme on infant feeding during emergencies and adequate counselling support in community.
- More importantly there is a need for effective implementation of the International Code of Marketing of Breastmilk Substitutes⁴ by enacting a national legislation which includes all the provisions of the Code and establishing Code monitoring mechanisms which are independent, transparent and free from commercial influence.

1. Dadhich JP, Smith J, Iellamo A, Suleiman A. Report on carbon footprints due to milk formula: a study from selected countries of the Asia-Pacific Region. Delhi: BPNI/IBFAN Asia; 2016.

2. Euromonitor International (2016). Passport-Baby Food in Malaysia

3. WBTi report of Malaysia 2015. <http://www.worldbreastfeedingtrends.org/GenerateReports/countrysubmit.php?country=MY>

4. WHO, UNICEF, IBFAN. Marketing of breast-milk substitutes: national implementation of the international code: status report 2016

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However, the use of milk formula is increasingly driven by sub-optimal implementation of policies and programmes, particularly regulation of marketing of commercial baby foods to enhance optimal breastfeeding practices.

This report-card provides estimates of GHG emissions arising from BMS sale in Philippines. This is set alongside assessment of the implementation of policies and programmes on infant and young child feeding in the country and some suggested actions to improve the situation.

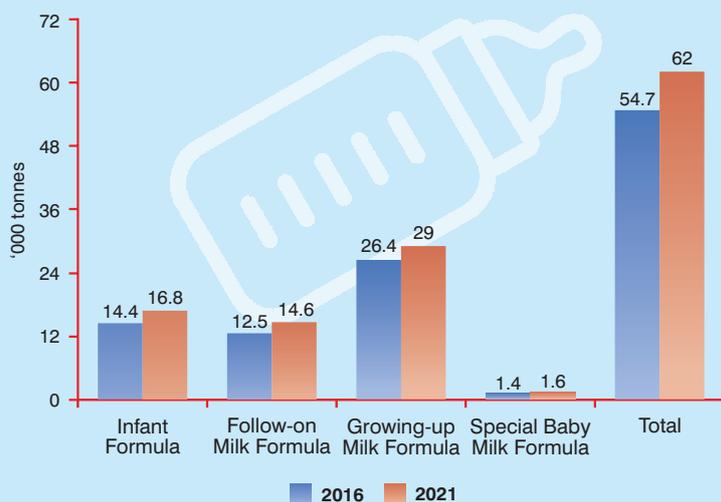


Estimating GHG emissions due to BMS

This report card has used the method developed by IBFAN Asia to estimate the GHG emission [kg CO₂ eq. emissions, that is, the GHG amount that would have the same global warming potential as a kilogram of carbon dioxide gas (CO₂)] per kg of BMS sold. It took into account the GHG emissions due to constituents of BMS like milk powder, vegetable oils and sugars, as found from a literature review. Proportions of ingredients in various BMS products were calculated using Codex Alimentarius guidance on macronutrient composition. Published industry data from Euromonitor International for milk formula sales provided data on volumes of milk formula sold in the country.

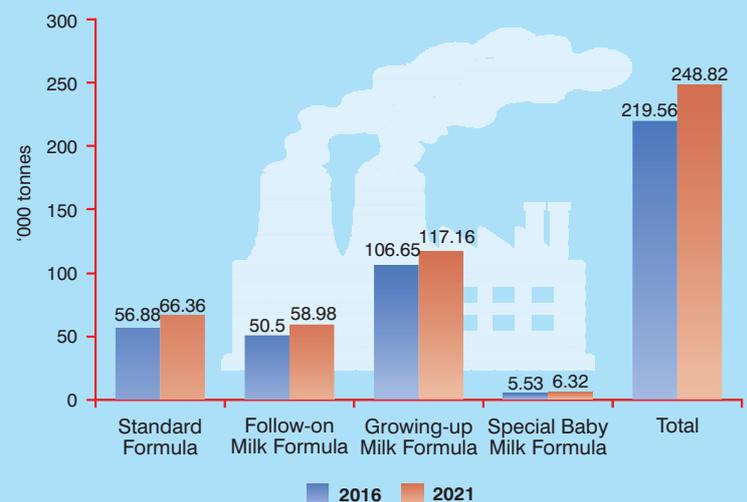
Estimated GHG emissions per kg of BMS ranged from 3.95 kg CO₂ eq. for standard infant formula and special baby milk formula and 4.04 kg CO₂ eq. for follow-up formula and growing up milks.¹

Sales of BMS in 2016 and projected sales in 2021 ('000 Tonnes)²



- In 2016, total sale of BMS in Philippines was 54,700 tonnes, out of which 26,400 tonnes was growing up milks, 12,500 tonnes was follow-up formula, 14,400 tonnes was infant formula and 1400 tonnes was special baby milk formula.
- Total projected sale of BMS in Philippines in 2021 is 62,000 tonnes out of which 29,000 tonnes is growing up milk, 14,600 tonnes is follow-up formula, 16800 tonnes is infant formula and 1600 tonnes is special baby milk formula.
- Projections show that sale of all categories of BMS will increase substantially by 2021

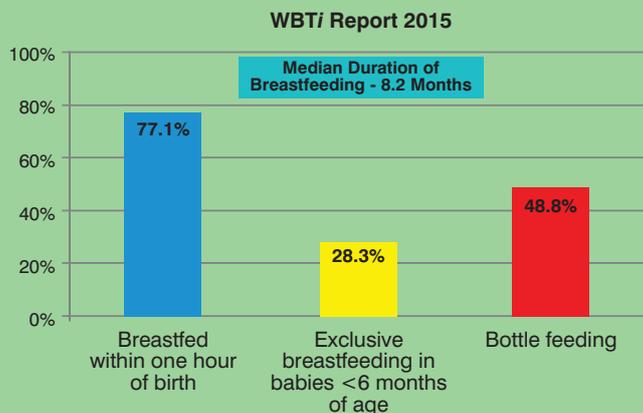
GHG Emissions due to BMS in 2016 and projected emissions in 2021 ('000 Tonnes CO₂ eq.)^{1,2}



- Total GHG emissions due to BMS in 2016 was 219,560 tonnes of CO₂ eq. out of which 106,650 tonnes was due to growing up milks, 56,880 tonnes was due to infant formula, 50,500 tonnes was due to follow up formula, and 5,530 tonnes was due to special baby milk formula.
- Projected total GHG emissions in 2021 due to BMS is 248,820 tonnes of CO₂ eq., maximum contribution to it will come from the growing up milks.

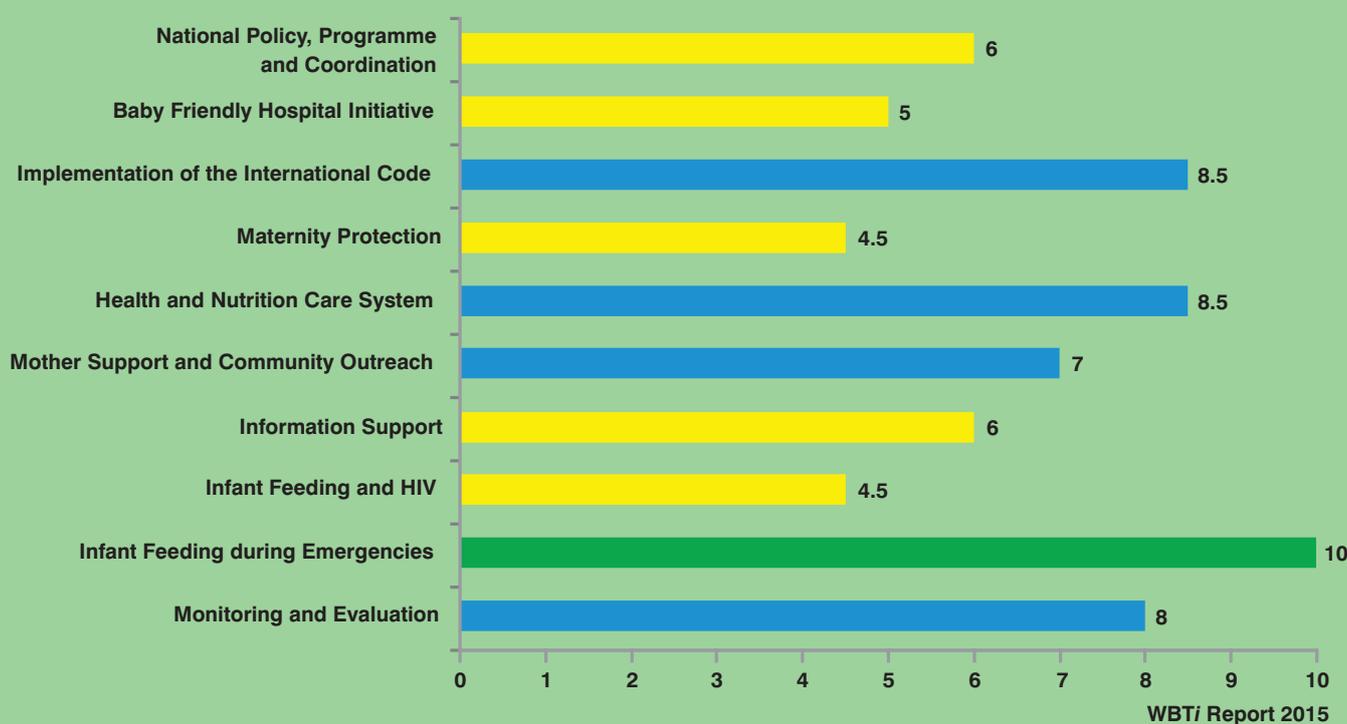
IYCF Practices

A high bottle feeding rate of 48.8% coupled with a low exclusive breastfeeding < 6 months along with a median duration of breastfeeding of 8.2 months need immediate attention. It shows that BMS are introduced early and they replace breastfeeding during the infancy and in the second year of life.



Policies and Programmes on IYCF³

To enhance breastfeeding rates and to restrict use of BMS, strengthening of policies and programmes on IYCF is required. WBTi assessment 2015 has revealed many gaps in policies and programmes on IYCF.



- There is a need to have a robust national IYCF policy, effective programme to improve breastfeeding practices in hospitals, enhanced maternity protection and effective policies and programmes on HIV and infant feeding.
- More importantly there is a need for effective implementation of the International Code of Marketing of Breastmilk Substitutes⁴ by:
 - Strengthening the Code legislation to bridge the gaps being exploited by the manufacturers to promote baby foods by prohibiting advertisements and contacts with mothers and banning nutrition and health claims.
 - Establishing International Code/national legislation monitoring mechanisms which are independent and transparent and free from commercial influence.

1. Dadhich JP, Smith J, Iellamo A, Suleiman A. Report on carbon footprints due to milk formula: a study from selected countries of the Asia-Pacific Region. Delhi: BPNI/IBFAN Asia; 2016.
 2. Euromonitor International (2016). Passport-Baby Food in Philippines
 3. WBTi report of Philippines. 2015. <http://worldbreastfeedingtrends.org/GenerateReports/countrysubmit.php?country=PH>
 4. WHO, UNICEF, IBFAN. Marketing of breast-milk substitutes: national implementation of the international code: status report 2016

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Report Card on Carbon Footprints due to Breastmilk Substitutes (BMS)

Breastfeeding is a sustainable and natural source of food and nutrition. On the other hand, industrially manufactured Breastmilk Substitutes are made from dairy and other agricultural products, which generate greenhouse gases (GHG) including methane and nitrous oxide during production, transport and use. Their use also generates a sizable volume of waste, which needs disposal. **GreenFeeding** is a call to make feeding decisions that have dual benefits i.e. practicing breastfeeding which is a natural and sustainable source of food and nutrition for infants and young children (and contributes to achieving global nutrition targets), as well as avoiding BMS and helping conserve the natural environment.

However, the use of milk formula is increasingly driven by sub-optimal implementation of policies and programmes, particularly regulation of marketing of commercial baby foods to enhance optimal breastfeeding practices.

This report-card provides estimates of GHG emissions arising from BMS sale in Republic of Korea. This is set alongside assessment of the implementation of policies and programmes on infant and young child feeding in the country and some suggested actions to improve the situation.

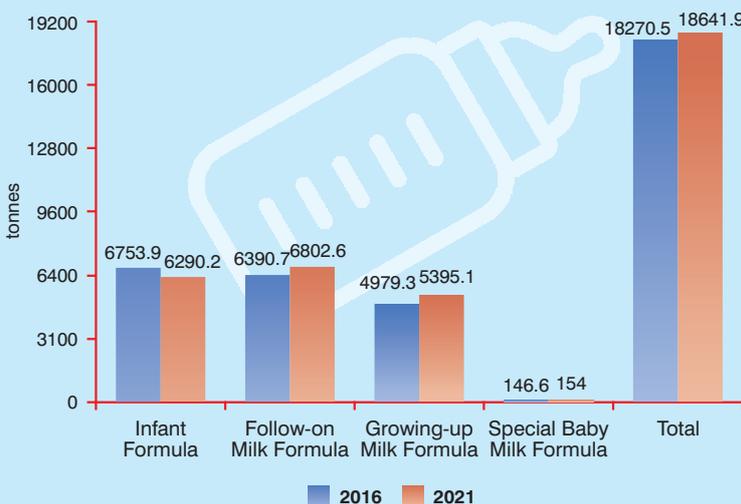


Estimating GHG emissions due to BMS

This report card has used the method developed by IBFAN Asia to estimate the GHG emission [kg CO₂ eq. emissions, that is, the GHG amount that would have the same global warming potential as a kilogram of carbon dioxide gas (Co₂)] per kg of BMS sold. It took into account the GHG emissions due to constituents of BMS like milk powder, vegetable oils and sugars, as found from a literature review. Proportions of ingredients in various BMS products were calculated using Codex Alimentarius guidance on macronutrient composition. Published industry data from Euromonitor International for milk formula sales provided data on volumes of milk formula sold in the country.

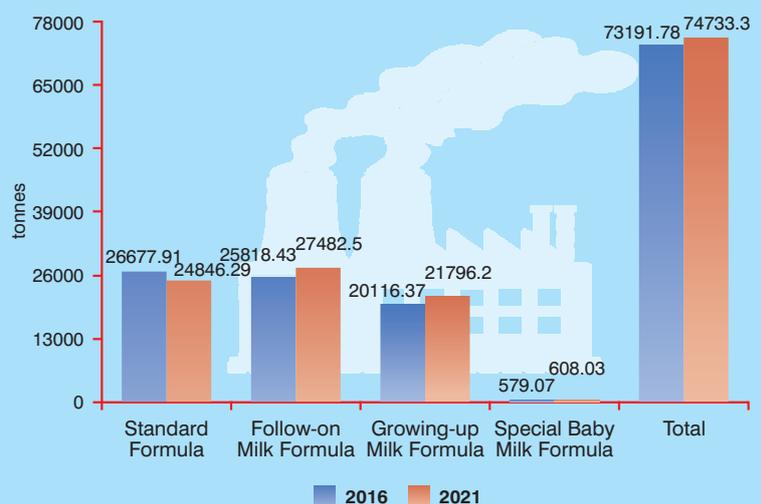
Estimated GHG emissions per kg of BMS ranged from 3.95 kg CO₂ eq. for standard infant formula and special baby milk formula and 4.04 kg CO₂ eq. for follow-up formula and growing up milks.¹

Sales of BMS in 2016 and projected sales in 2021 (Tonnes)²



- In 2016, total sale of BMS in South Korea was 18270.5 tonnes, out of which 4979.3 tonnes was growing up milks, 6390.7 tonnes was follow-up formula, 6753.9 tonnes was infant formula and 146.6 tonnes was special baby milk formula.
- Total projected sale of BMS in South Korea in 2021 is 18641.9 tonnes out of which 5395.1 tonnes will be growing up milk, 6802.6 tonnes follow-up formula, 6290.2 tonnes infant formula and 154 tonnes will be the special baby milk formula.
- Projections show that sale of all categories of BMS except infant formula will increase by 2021.

GHG Emissions due to BMS in 2016 and projected emissions in 2021 (Tonnes Co₂ eq.)^{1,2}



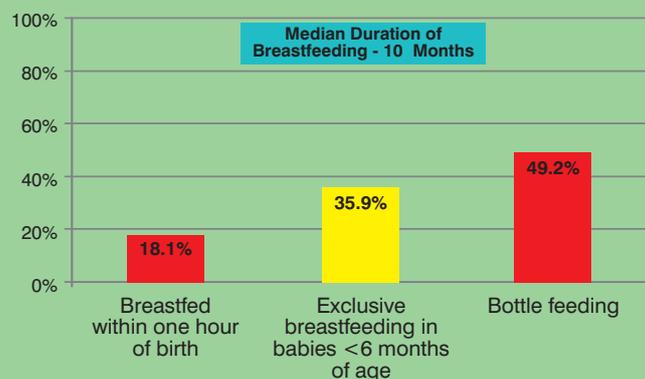
- Total GHG emissions due to BMS in 2016 was 73,191.77 tonnes of CO₂ eq. out of which 20,116.37 tonnes was due to growing up milks, 26677.90 tonnes was due to standard formula, 25,818.42 tonnes was due to follow up formula, and 579.07 tonnes was due to special baby milk formula.
- Projected total GHG emissions in 2021 due to BMS is 74733.29 tonnes of Co₂ eq., maximum contribution to it will come from the follow on up milks.

IYCF Practices

A high bottle feeding rate of 49.2% coupled with a low rate of initiation of breastfeeding within one month and exclusive breastfeeding < 6 months along with a median duration of breastfeeding at 10 months need immediate attention. It shows that BMS are introduced early and they replace breastfeeding during the infancy and in the second year of life.

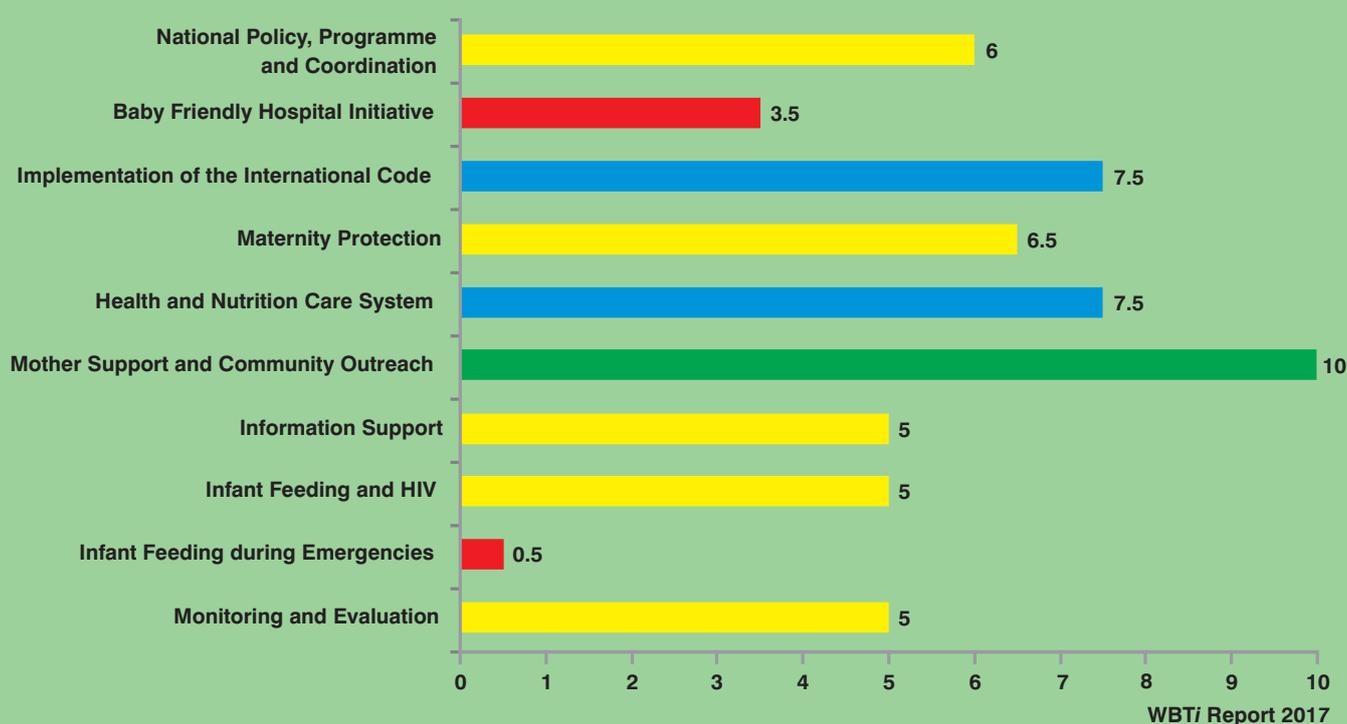


WBTi Report 2017



Policies and Programmes on IYCF³

To enhance breastfeeding rates and to restrict use of BMS, strengthening of policies and programmes on IYCF is required. WBTi assessment 2017 has revealed many gaps in policies and programmes on IYCF.



- There is a need for a robust national IYCF policy, effective programme to improve breastfeeding practices in hospitals, enhanced maternity protection, and effective policies and programmes on HIV and infant feeding and during emergencies.
- More importantly there is a need for effective implementation of the International Code of Marketing of Breastmilk Substitutes⁴ by:
 - Strengthening the national legislation by including all the provisions of the Code.
 - Establishing International Code monitoring mechanisms which are independent and transparent, free from commercial influence and empowered to investigate the Code violations.

1. Dadhich JP, Smith J, Iellamo A, Suleiman A. Report on carbon footprints due to milk formula: a study from selected countries of the Asia-Pacific Region. Delhi: BPNI/IBFAN Asia; 2016.
 2. Euromonitor International (2016). Passport-Baby Food in South Korea
 3. WBTi report of Republic of Korea, 2017. <http://www.worldbreastfeedingtrends.org/GenerateReports/countrysubmit.php?country=KR>
 4. WHO, UNICEF, IBFAN. Marketing of breast-milk substitutes: national implementation of the international code: status report 2016

Written by: Dr. J.P. Dadhich **Reviewed by:** Kim Jaiok, Dr. Arun Gupta
Designed by: Plan B Communication Partners, Amit Dahiya
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Report Card on Carbon Footprints due to Breastmilk Substitutes (BMS)

Breastfeeding is a sustainable and natural source of food and nutrition. On the other hand, industrially manufactured Breastmilk Substitutes are made from dairy and other agricultural products, which generate greenhouse gases (GHG) including methane and nitrous oxide during production, transport and use. Their use also generates a sizable volume of waste, which needs disposal. **GreenFeeding** is a call to make feeding decisions that have dual benefits i.e. practicing breastfeeding which is a natural and sustainable source of food and nutrition for infants and young children (and contributes to achieving global nutrition targets), as well as avoiding BMS and helping conserve the natural environment.

However, the use of milk formula is increasingly driven by sub-optimal implementation of policies and programmes, particularly regulation of marketing of commercial baby foods to enhance optimal breastfeeding practices.

This report-card provides estimates of GHG emissions arising from BMS sale in Singapore. This is set alongside assessment of the implementation of policies and programmes on infant and young child feeding in the country and some suggested actions to improve the situation.

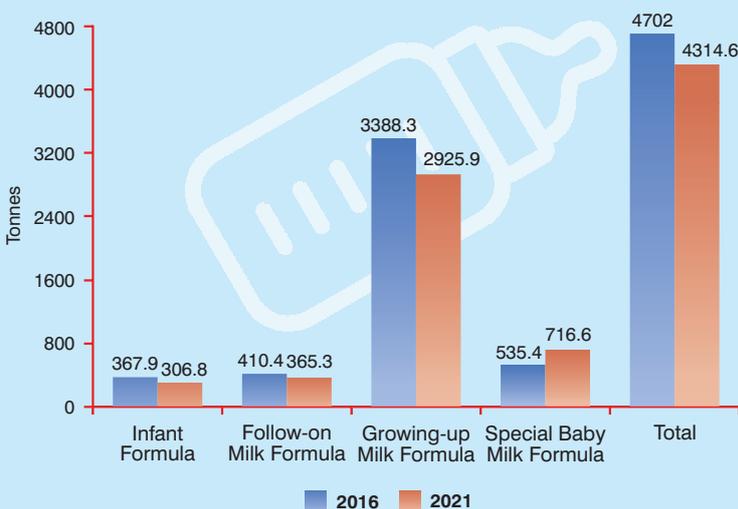


Estimating GHG emissions due to BMS

This report card has used the method developed by IBFAN Asia to estimate the GHG emission [kg CO₂ eq. emissions, that is, the GHG amount that would have the same global warming potential as a kilogram of carbon dioxide gas (CO₂)] per kg of BMS sold. It took into account the GHG emissions due to constituents of BMS like milk powder, vegetable oils and sugars, as found from a literature review. Proportions of ingredients in various BMS products were calculated using Codex Alimentarius guidance on macronutrient composition. Published industry data from Euromonitor International for milk formula sales provided data on volumes of milk formula sold in the country.

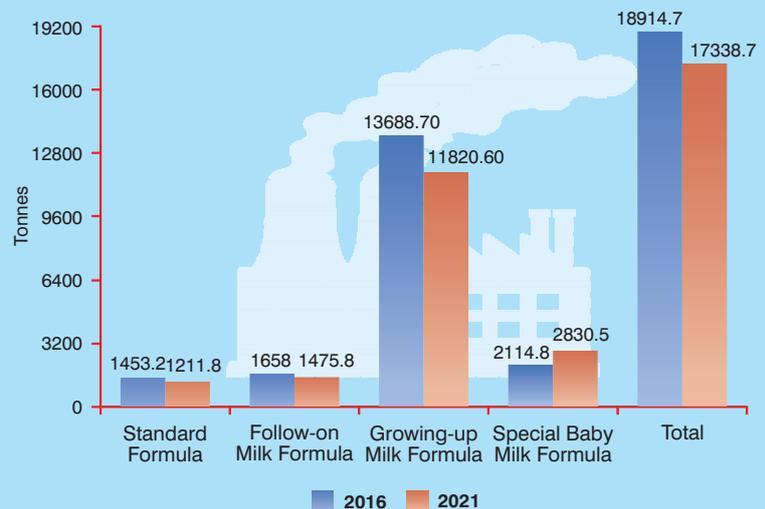
Estimated GHG emissions per kg of BMS ranged from 3.95 kg CO₂ eq. for standard infant formula and special baby milk formula and 4.04 kg CO₂ eq. for follow-up formula and growing up milks.¹

Sales of BMS in 2016 and projected sales in 2021 (Tonnes)²



- In 2016, total sale of BMS in Singapore was 4,702 tonnes, out of which 3,388.3 tonnes was growing up milks, 410.4 tonnes was follow-up formula, 367.9 tonnes was standard infant formula and 535.4 tonnes was special baby milk formula.
- Total projected sale of BMS in Singapore in 2021 is 4,314.6 tonnes out of which 2,925.9 tonnes is growing up milk, 365.3 tonnes is follow-up formula, 306.8 tonnes is standard infant formula and 716.6 tonnes is special baby milk formula.
- Projections show that by 2021 sale of all categories of BMS will decrease by 10%, except special baby milk formula which will increase substantially.

GHG Emissions due to BMS in 2016 and projected emissions in 2021 (Tonnes CO₂ eq.)^{1,2}



- Total GHG emissions due to BMS in 2016 was 18,914.7 tonnes of CO₂ eq. out of which 13688.7 tonnes was due to growing up milks, 1,453.2 tonnes was due to standard formula, 1,658 tonnes was due to follow up formula, and 2,114.8 tonnes was due to special baby milk formula.
- Projected total GHG emissions in 2021 due to BMS is 17,338.7 tonnes of CO₂ eq., maximum contribution to it will come from the growing up milks.

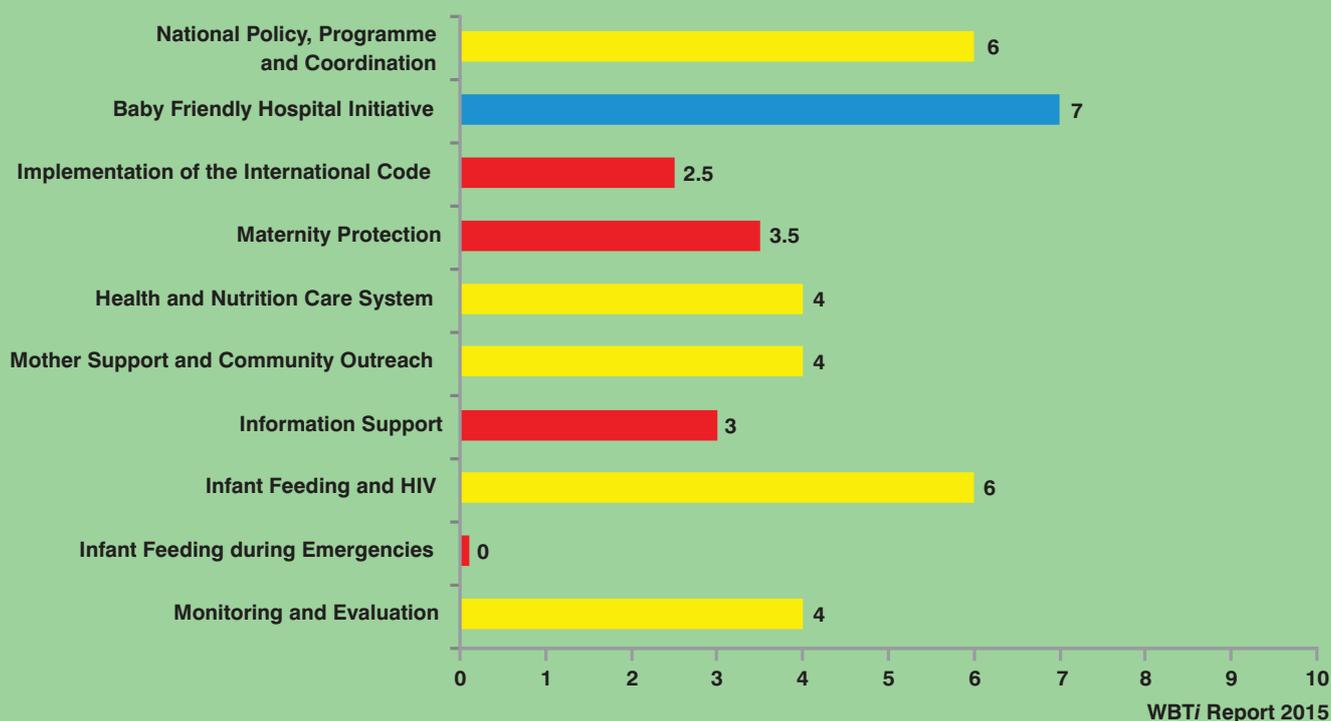
IYCF Practices³

Adequate data for breastfeeding practices are not available in Singapore. The national breastfeeding survey 2011 reported that 95% mothers initiated breastfeeding in hospital but exact timings were not reported; 50.3% mothers breastfed exclusively at hospital discharge which dropped to 0.8% at 6 months post-delivery. Any breastfeeding rate was 41.6% at 6 months, while median duration of breastfeeding was 1.8 months



Policies and Programmes on IYCF⁴

To enhance breastfeeding rates and to restrict use of BMS, strengthening of policies and programmes on IYCF is required. WBTi assessment 2015 has revealed many gaps in policies and programmes on IYCF.



- There is a need to have a robust national IYCF policy, enhanced maternity protection, appropriate IEC policy, effective policies and programmes on infant feeding during emergencies and inclusion of breastfeeding indicators in the national health and nutrition surveys.
- More importantly there is a need for effective implementation of the International Code of Marketing of Breastmilk Substitutes⁵ by enacting a national legislation which includes all the provisions of the Code and establishing Code monitoring mechanisms which are independent, transparent and free from commercial influence.

1. Dadhich JP, Smith J, Iellamo A, Suleiman A. Report on carbon footprints due to milk formula: a study from selected countries of the Asia-Pacific Region. Delhi: BPNI/IBFAN Asia; 2016.

2. Euromonitor International (2016). Passport-Baby Food in Singapore

3. National Breastfeeding Survey 2011, Available at: <https://data.gov.sg/dataset/national-breastfeeding-survey>

4. WBTi report of Singapore 2015. <http://www.worldbreastfeedingtrends.org/GenerateReports/countrysubmit.php?country=SG>

5. WHO, UNICEF, IBFAN. Marketing of breast-milk substitutes: national implementation of the international code: status report 2016

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Report Card on Carbon Footprints due to Breastmilk Substitutes (BMS)

Breastfeeding is a sustainable and natural source of food and nutrition. On the other hand, industrially manufactured Breastmilk Substitutes are made from dairy and other agricultural products, which generate greenhouse gases (GHG) including methane and nitrous oxide during production, transport and use. Their use also generates a sizable volume of waste, which needs disposal. **GreenFeeding** is a call to make feeding decisions that have dual benefits i.e. practicing breastfeeding which is a natural and sustainable source of food and nutrition for infants and young children (and contributes to achieving global nutrition targets), as well as avoiding BMS and helping conserve the natural environment.

However, the use of milk formula is increasingly driven by sub-optimal implementation of policies and programmes, particularly regulation of marketing of commercial baby foods to enhance optimal breastfeeding practices.

This report-card provides estimates of GHG emissions arising from BMS sale in Taiwan, ROC. This is set alongside assessment of the implementation of policies and programmes on infant and young child feeding in the country and some suggested actions to improve the situation.

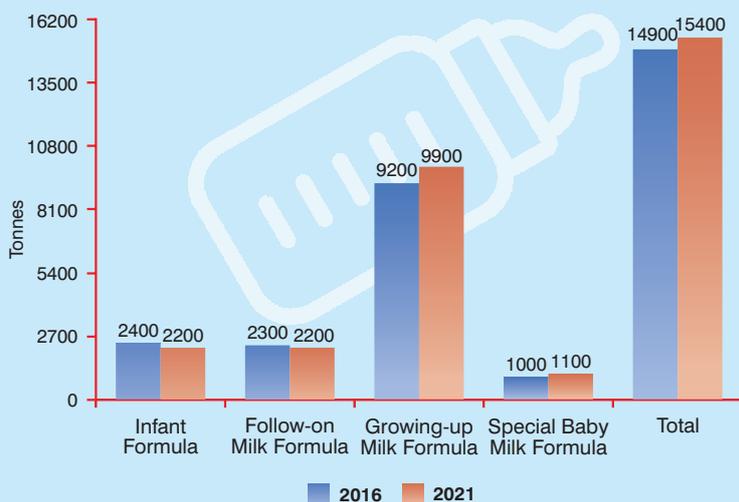


Estimating GHG emissions due to BMS

This report card has used the method developed by IBFAN Asia to estimate the GHG emission [kg CO₂ eq. emissions, that is, the GHG amount that would have the same global warming potential as a kilogram of carbon dioxide gas (CO₂)] per kg of BMS sold. It took into account the GHG emissions due to constituents of BMS like milk powder, vegetable oils and sugars, as found from a literature review. Proportions of ingredients in various BMS products were calculated using Codex Alimentarius guidance on macronutrient composition. Published industry data from Euromonitor International for milk formula sales provided data on volumes of milk formula sold in the country.

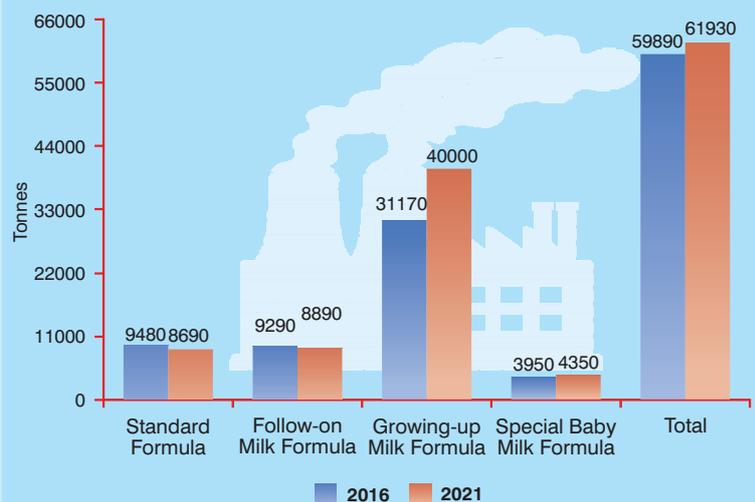
Estimated GHG emissions per kg of BMS ranged from 3.95 kg CO₂ eq. for standard infant formula and special baby milk formula and 4.04 kg CO₂ eq. for follow-up formula and growing up milks.¹

Sales of BMS in 2016 and projected sales in 2021 (Tonnes)²



- In 2016, total sale of BMS in Taiwan, ROC was 14,900 tonnes, out of which 9,200 tonnes was growing up milks, 2,300 tonnes was follow-up formula and 2,400 tonnes was infant formula.
- Total projected sale of BMS in Taiwan in 2021 is 15,400 tonnes out of which 9,900 tonnes is growing up milk, 2,200 tonnes is follow-up formula and 2,200 tonnes is infant formula.
- Projections show sale of infant formula and follow-up formula will go down slightly while there will be about 8% increase in the sale of growing up milk by 2021.

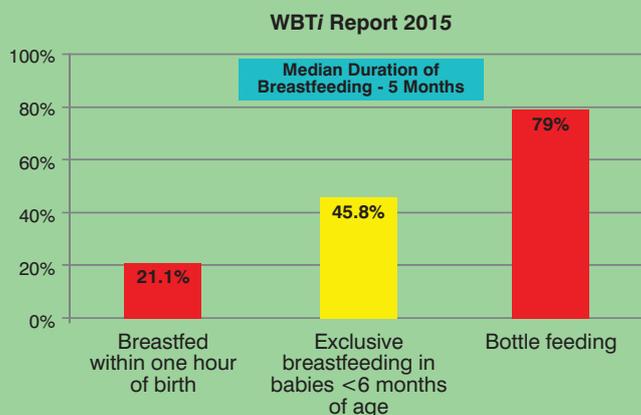
GHG Emissions due to BMS in 2016 and projected emissions in 2021 (Tonnes CO₂ eq.)^{1,2}



- Total GHG emissions due to BMS in 2016 was 59,890 tonnes of CO₂ eq. out of which 37,170 tonnes was due to growing up milks, 9,290 tonnes was due to follow up formula, 9,480 tonnes was due to infant formula and 3,950 tonnes was due to special baby milk formula.
- Projected total GHG emissions in 2021 due to BMS will increase slightly to 61,930 tonnes of CO₂ eq., maximum contribution to it will come from the growing up milks.

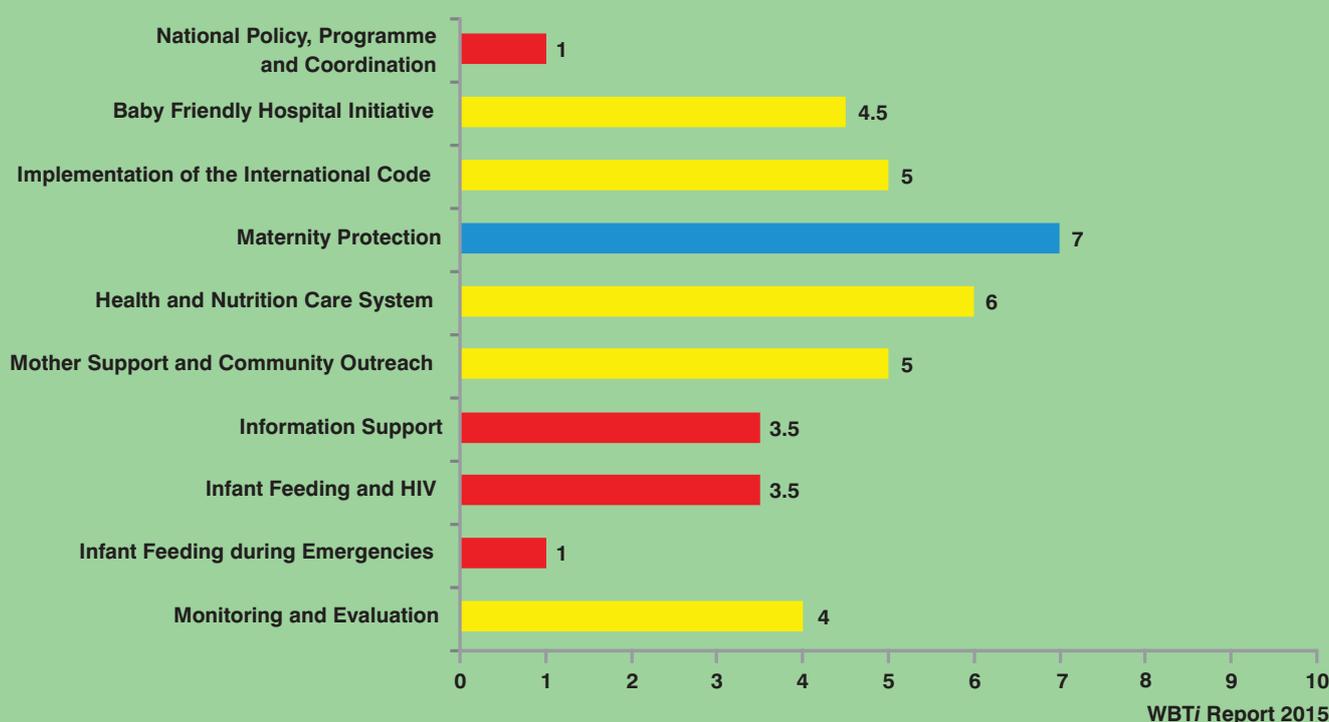
IYCF Practices

A high bottle feeding rate of 79.0% coupled with low rates of early initiation and exclusive breastfeeding < 6 months and a median duration of breastfeeding of 5 months need immediate attention. It shows that BMS are introduced early and they replace breastfeeding during the infancy and in the second year of life.



Policies and Programmes on IYCF³

To enhance breastfeeding rates and to restrict use of BMS, strengthening of policies and programmes on IYCF is required. WBTi assessment 2016 has revealed many gaps in policies and programmes on IYCF.



- There is a need to have a robust national IYCF policy, appropriate information support, improved policy and programmes on HIV and infant feeding and strengthening of programmes on infant feeding during emergencies.
- More importantly there is a need for effective implementation of the International Code of Marketing of Breastmilk Substitutes by enacting a national law which includes all the provision of the Code and have a robust mechanism for its implementation. Although, advertisements of the breastmilk substitutes are now not allowed due to the newly revised Food Safety and Sanitation Law.⁴

1. Dadhich JP, Smith J, Iellamo A, Suleiman A. Report on carbon footprints due to milk formula: a study from selected countries of the Asia-Pacific Region. Delhi: BPNI/IBFAN Asia; 2016.
 2. Euromonitor International (2016). Passport-Baby Food in Taiwan
 3. WBTi report of Taiwan 2015. <http://worldbreastfeedingtrends.org/GenerateReports/countrysubmit.php?country=TW>
 4. <https://www.global-regulation.com/law/taiwan/9330910/act-governing-food-safety-and-sanitation.html>

Written by: Dr. J.P. Dadhich **Reviewed by:** Chwang Leh-Chii, Dr. Arun Gupta
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Breastfeeding is a sustainable and natural source of food and nutrition. On the other hand, industrially manufactured Breastmilk Substitutes are made from dairy and other agricultural products, which generate greenhouse gases (GHG) including methane and nitrous oxide during production, transport and use. Their use also generates a sizable volume of waste, which needs disposal. **GreenFeeding** is a call to make feeding decisions that have dual benefits i.e. Practicing breastfeeding which is a natural and sustainable source of food and nutrition for infants and young children (and contributes to achieving global nutrition targets), as well as avoiding BMS and helping conserve the natural environment.

However, the use of milk formula is increasingly driven by sub-optimal implementation of policies and programmes, particularly regulation of marketing of commercial baby foods to enhance optimal breastfeeding practices.

This report-card provides estimates of GHG emissions arising from BMS sale in Thailand. This is set alongside assessment of the implementation of policies and programmes on infant and young child feeding in the country and some suggested actions to improve the situation.

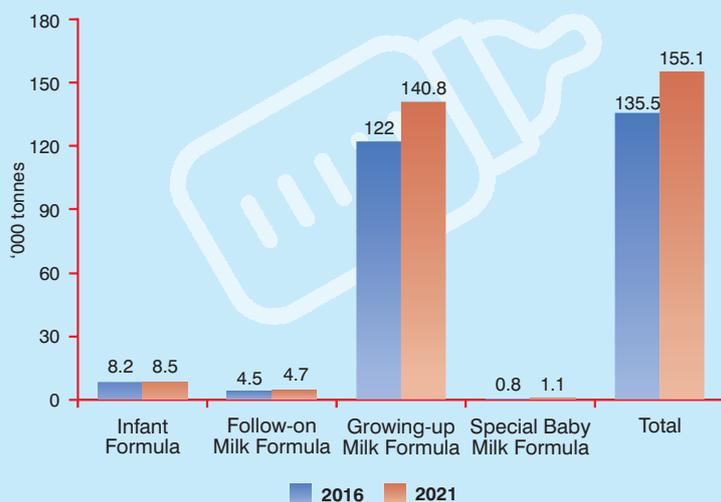


Estimating GHG emissions due to BMS

This report card has used the method developed by IBFAN Asia to estimate the GHG emission [kg CO₂ eq. emissions, that is, the GHG amount that would have the same global warming potential as a kilogram of carbon dioxide gas (CO₂)] per kg of BMS sold. It took into account the GHG emissions due to constituents of BMS like milk powder, vegetable oils and sugars, as found from a literature review. Proportions of ingredients in various BMS products were calculated using Codex Alimentarius guidance on macronutrient composition. Published industry data from Euromonitor International for milk formula sales provided data on volumes of milk formula sold in the country.

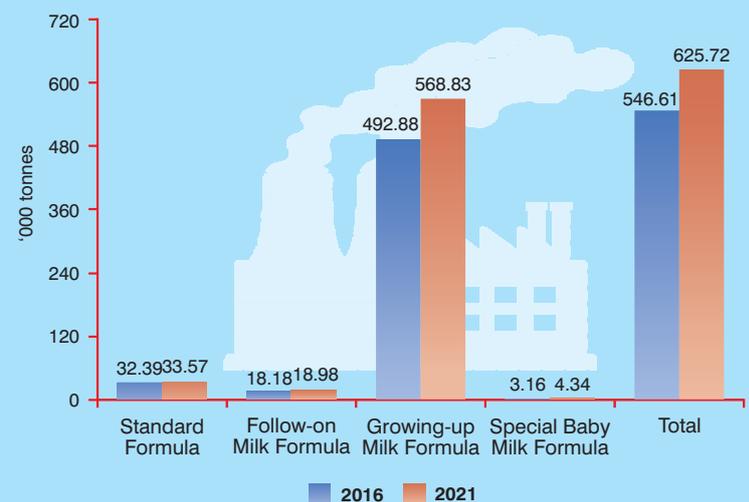
Estimated GHG emissions per kg of BMS ranged from 3.95 kg CO₂ eq. for standard infant formula and special baby milk formula and 4.04 kg CO₂ eq. for follow-up formula and growing up milks.¹

Sales of BMS in 2016 and projected sales in 2021 ('000 Tonnes)²



- In 2016, total sale of BMS in Thailand was 135,500 tonnes, out of which 122,000 tonnes was growing up milks, 4,500 tonnes was follow-up formula and 8,200 tonnes was infant formula.
- Total projected sale of BMS in 2021 is 155,100 tonnes out of which 140,800 tonnes will be growing up milk, 4,700 tonnes follow-up formula and 8,500 tonnes infant formula.
- Projections shows that there will be about 20% increase in the sales of BMS by 2021, most of which will be contributed by the growing-up milks.

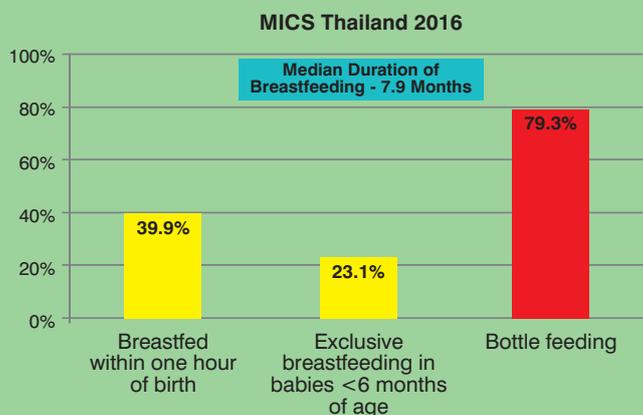
GHG Emissions due to BMS in 2016 and projected emissions in 2021 ('000 Tonnes CO₂ eq.)^{1,2}



- Total GHG emissions due to BMS in 2016 was 546,610 tonnes of CO₂ eq. out of which 492,880 tonnes was due to growing up milks, 32,390 tonnes was due to infant formula, 18,180 tonnes was due to follow up formula, and 3,160 tonnes was due to special baby milk formula.
- Projected total GHG emissions in 2021 due to BMS is 625,720 tonnes of CO₂ eq., maximum contribution to it will come from the growing up milks.

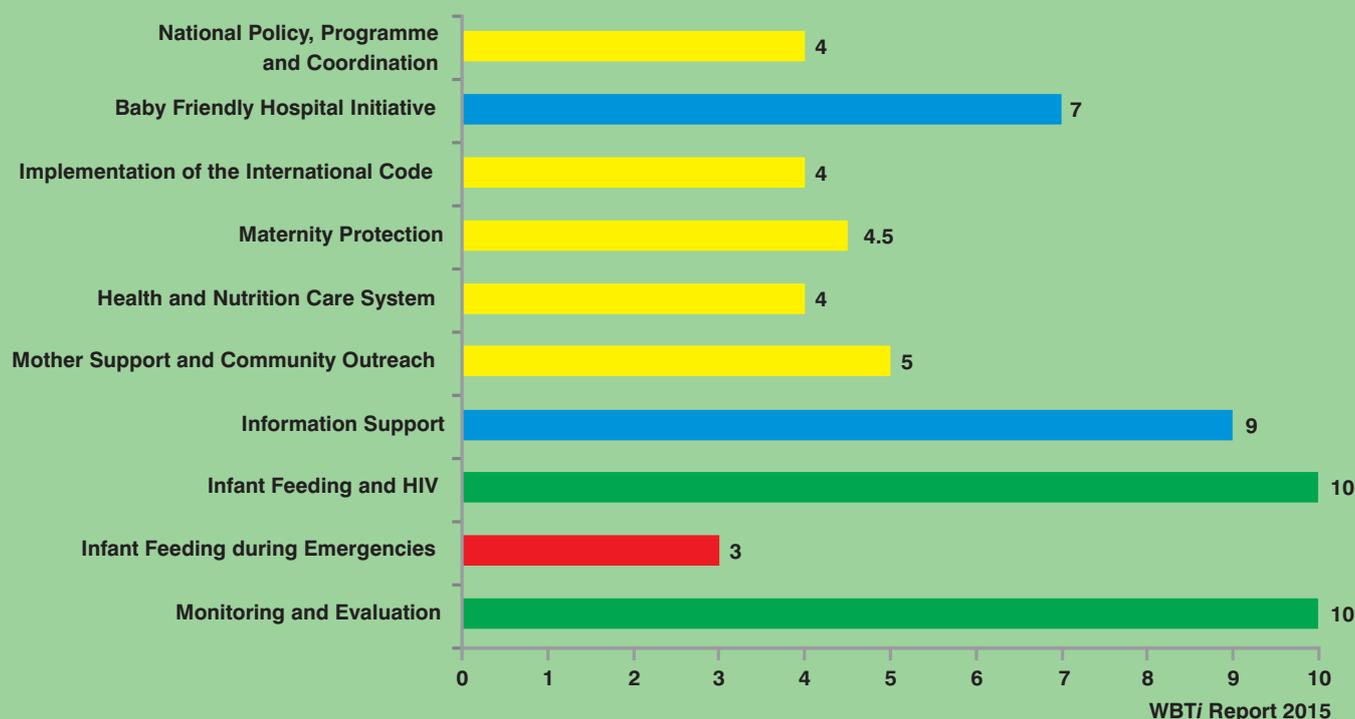
IYCF Practices

A high bottle feeding rate of 79.3% coupled with a low exclusive breastfeeding < 6 months along with a median duration of breastfeeding at 7.9 months need immediate attention. It shows that BMS are introduced early and they replace breastfeeding during the infancy and in the second year of life.



Policies and Programmes on IYCF³

To enhance breastfeeding rates and to restrict use of BMS, strengthening of policies and programmes on IYCF is required. WBTi assessment 2015 has revealed many gaps in policies and programmes on IYCF.



- There is a need to have a robust national IYCF policy, effective programme to improve breastfeeding practices in hospitals, enhanced maternity protection and effective policies and programmes on infant feeding during emergencies.
- More importantly there is a need for effective implementation of the International Code of Marketing of Breastmilk Substitutes⁴ by strengthening the Code legislation to bridge the gaps being exploited by the manufacturers to promote their products such as prohibiting advertisement of follow-on formula and growing-up milks.

1. Dadhich JP, Smith J, Iellamo A, Suleiman A. Report on carbon footprints due to milk formula: a study from selected countries of the Asia-Pacific Region. Delhi: BPNI/IBFAN Asia; 2016.

2. Euromonitor International (2016). Passport-Baby Food in Thailand

3. WBTi report of Thailand 2015. <http://worldbreastfeedingtrends.org/GenerateReports/countrysubmit.php?country=TH>

4. [http://www.searo.who.int/thailand/news/control-marketing-of-infant-and-young-child-food-act\(2017\).pdf](http://www.searo.who.int/thailand/news/control-marketing-of-infant-and-young-child-food-act(2017).pdf)

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However, the use of milk formula is increasingly driven by sub-optimal implementation of policies and programmes, particularly regulation of marketing of commercial baby foods to enhance optimal breastfeeding practices.

This report-card provides estimates of GHG emissions arising from BMS sale in Vietnam. This is set alongside assessment of the implementation of policies and programmes on infant and young child feeding in the country and some suggested actions to improve the situation.

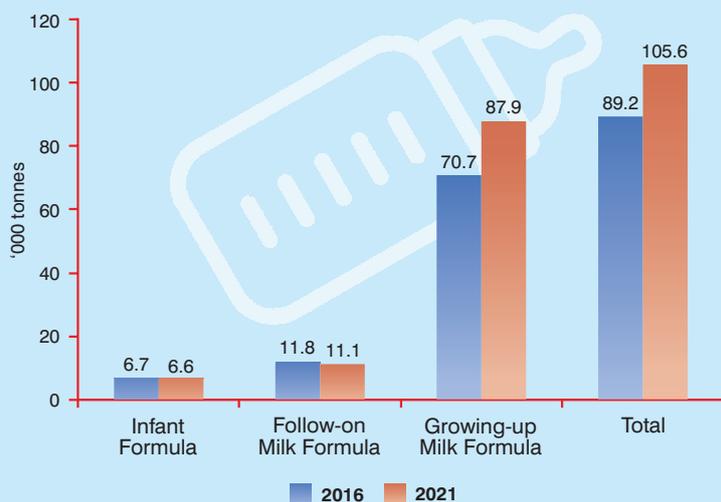


Estimating GHG emissions due to BMS

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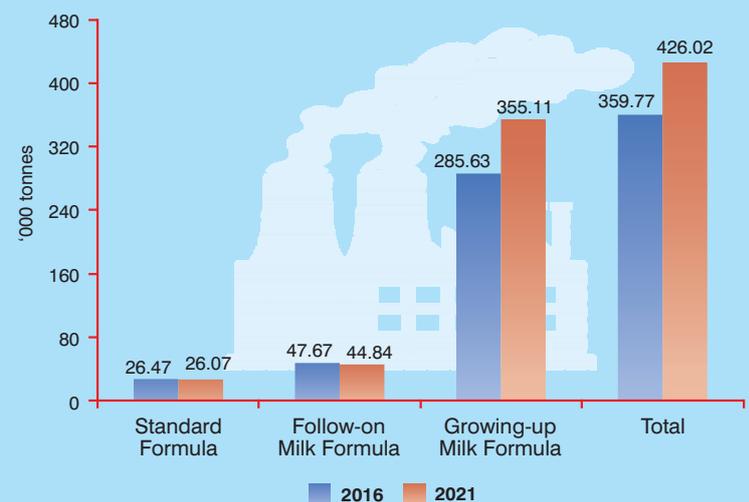
Estimated GHG emissions per kg of BMS ranged from 3.95 kg CO₂ eq. for standard infant formula and special baby milk formula and 4.04 kg CO₂ eq. for follow-up formula and growing up milks.¹

Sales of BMS in 2016 and projected sales in 2021 ('000 Tonnes)²



- In 2016, total sale of BMS in Vietnam was 89,200 tonnes, out of which 70,700 tonnes was growing up milks, 11,800 tonnes was follow-up formula and 6,700 tonnes was standard infant formula.
- Total projected sale of BMS in Vietnam in 2021 is 105,600 tonnes out of which 87,900 tonnes is growing up milk, 11,100 tonnes is follow-up formula and 6,600 tonnes is standard infant formula.
- Projections show sale of standard infant formula and follow-up formula will go down while there will be about 25% increase in the sale of growing up milk by 2021.

GHG Emissions due to BMS in 2016 and projected emissions in 2021 ('000 Tonnes CO₂ eq.)^{1,2}

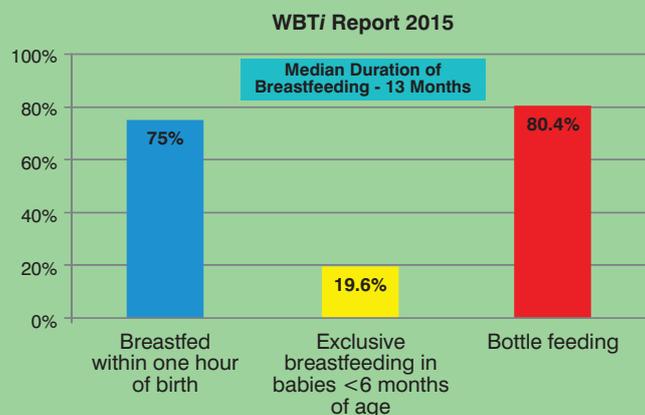


- Total GHG emissions due to BMS in 2016 was 359,770 tonnes of CO₂ eq. out of which 285,630 tonnes was due to growing up milks and 47,670 tonnes was due to follow up formula.
- Projected total GHG emissions in 2021 due to BMS is 426,020 tonnes of CO₂, with the maximum contribution to come from the growing up milks.

IYCF Practices

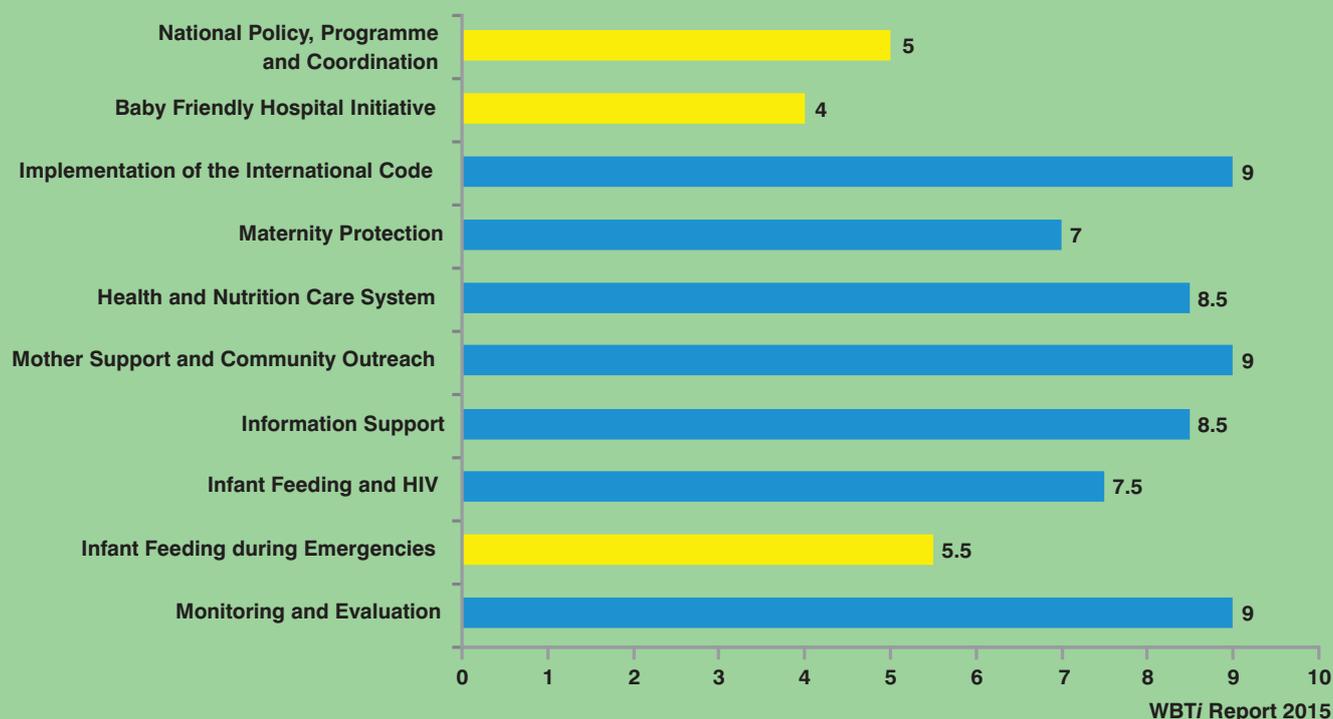
A high bottle feeding rate of 80.4%, a low rate of exclusive breastfeeding < 6 months and coupled with a median duration of breastfeeding of 13 months need immediate attention.

It shows that BMS are introduced early and they replace breastfeeding during the infancy and in the second year of life.



Policies and Programmes on IYCF³

To enhance breastfeeding rates and to restrict use of BMS, strengthening of policies and programmes on IYCF is required. WBTi assessment 2015 has revealed many gaps in policies and programmes on IYCF.



- There is a need to have a robust national IYCF policy, effective programme to improve breastfeeding practices in hospitals, safe infant feeding practices during emergencies, better maternity protection provisions and effective implementation of programmes on HIV and infant feeding.
- More importantly there is a need for effective implementation of the International Code of Marketing of Breastmilk Substitutes⁴ by strengthening the Code legislation to bridge the gaps being exploited by the manufacturers to promote their baby food and milk formula products; and establishing International Code monitoring mechanisms which are independent and transparent, free from commercial influence and empowered to impose legal sanctions.

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