



Global Container Management

San Antonio, Texas

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Cam Davreux - CropLife Canada

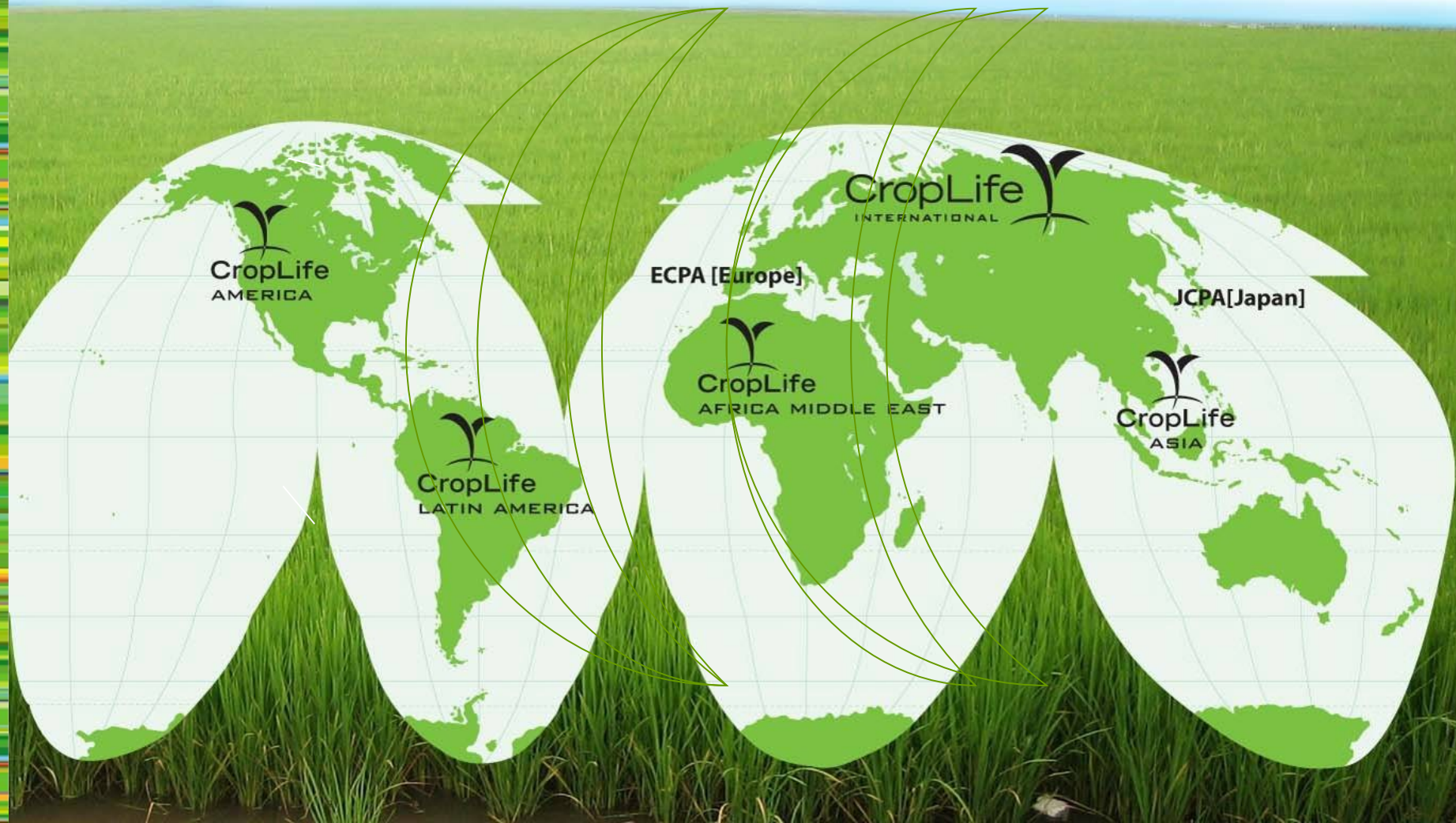


Greetings from Canada!

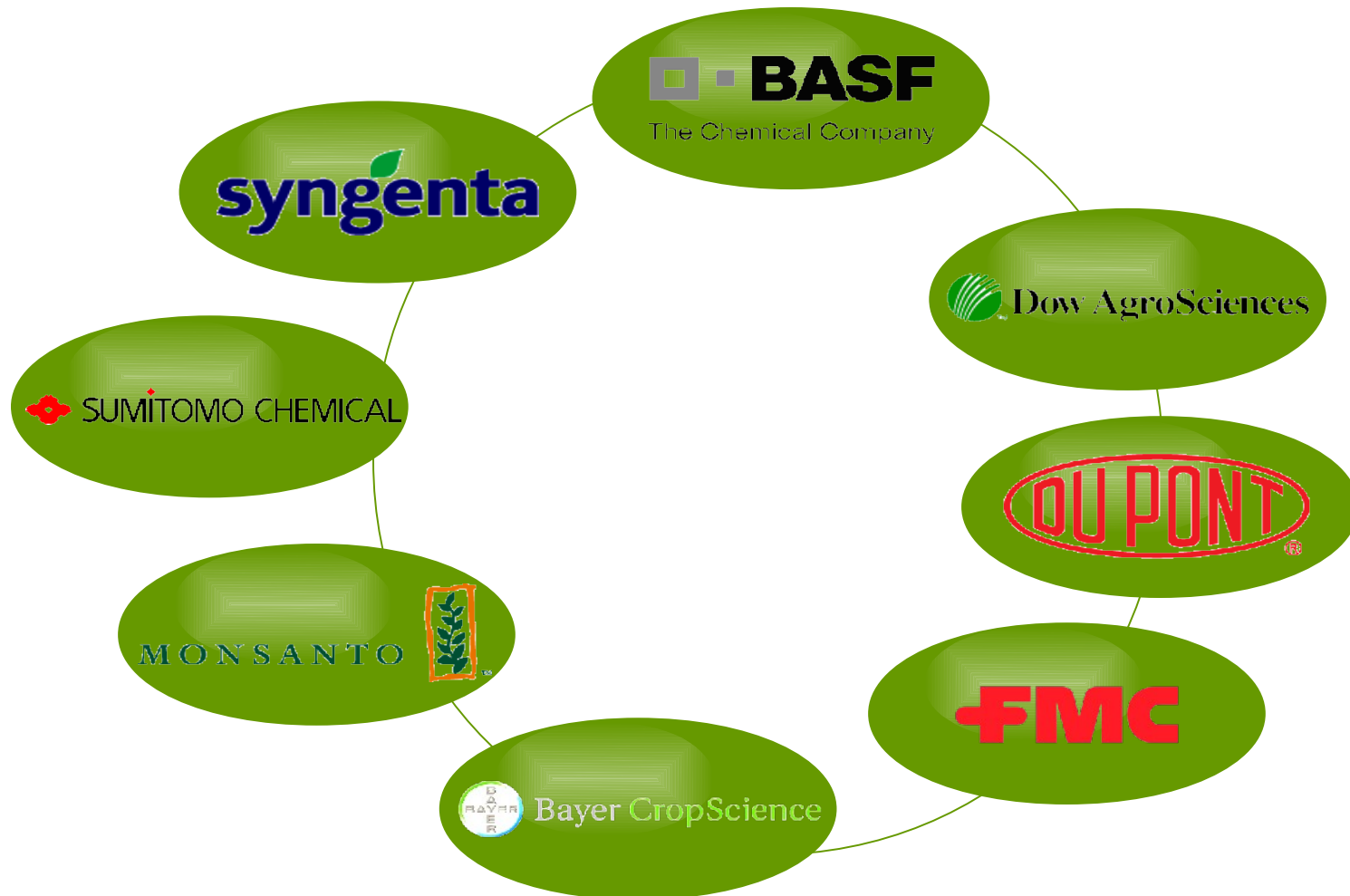


CropLife International - A Global Federation

Representing the plant science industry in 91 countries



Members include 8 international companies



Stewardship definition and principles

Definition:

The responsible and ethical management of a plant protection or biotechnology product throughout its lifecycle



CLI Stewardship

- 5 Global Committees:
 - Container management
 - Collection & destruction of obsolete pesticides
 - Integrated pest management
 - FAO Code of Conduct
 - Farmer training (safe use)



CLI Container Management Project Team

- Six members from the CropLife members
- Six members from Regions
- 32 countries with CM programs
- 20 pilot programs in developing world (Africa, Asia, E. Europe)
- Annual cost approx. \$40 million
- Concalls, & every two years – meet with the Country Managers



CLI Container Management Vision (2020):

**“As part of our
industry’s commitment
to full lifecycle product
stewardship, to
implement safe and
responsible
management of empty,
properly rinsed**



Global Container Management

PT's Over-arching objectives:

1. ***Health, safety & environmental risk management in all program elements***
2. ***Share global BMP's & technical studies***
3. ***Established criteria for new country pilot programs***
4. ***Global communications:***
 - ***3x rinsing***
 - ***branding***
5. ***Cost reduction - track KPI's & share cost reduction opportunities***



13 specific goals - 2011

1. Monitor KPI's (program efficiencies, cost comparisons, cost reduction.
2. Info sharing – 3 databases (financial/technical/policy)
5. Communication on effective 3x rinsing
6. “Roadmap” for entering new countries – guidance and assistance for pilot programs
7. Pilot programs
8. Eco-efficiency analysis/business models
9. End use applications for recycled plastic – dislodgeability testing (daphnia & algae)



Specific goals - 2011

8. Scientific assessment of farm drain tile
9. Health, safety, environment – implement best management practices
10. End use applications – update global list & all science based
11. Program branding & communications
12. Policy on seed treatment containers
13. Policy on drums & totes



Key Performance Indicators

- Number of countries with a program
- Number of people trained in proper rinsing
- Tonnes of recovered containers
- % recovery rate
- Total cost of program
- Cost per kg recovered by country & region
- Number of countries with non-hazardous classification



Information sharing

- Three databases:
 - Key performance indicators (KPI's)
 - Standard template for data input by country
 - Technical studies
 - Leachability of pesticides from plastic
 - Policy/position papers
 - Start-up “roadmap” for pilot programs



Triple Rinsing:

Communications to the developing world

- Fundamental for program
- Need one common message
- Improved safety
- Reduced program costs
- Launched in African countries



Follow these
steps

X3

Empty the container by
placing it upside down
over spray tank. Hold it
there for 30 seconds more

Triple-rinse your used pesticide containers!



1

Quarter-fill
the container
with water



2

Close the
container
and shake for
30 seconds



3

Empty the container
by placing it upside down
over spray tank. Hold it there for 30
seconds more



*Always
wear
protective
clothing*

Protect your health –
puncture the
container so it
cannot be
re-used and
send to recycler



Global Communications & Branding:

- Opportunity to position CM program - responsible & environmentally positive initiative
- Brand as CleanFARMS (or local country brand)
- Communicate reduction of industry carbon footprint – for example:
 - *For every 1,000 tons of plastic recycled...*
 - *3,850 barrels of oil saved*
 - *310 cars removed from the highways*
 - *saving of 51.4 billion BTU's of energy (vs. the use of virgin plastic)*
 - *1,000 tons of plastic burnt on the farm...*
 - *30,000 pounds (15 tons) of air pollution*



Trademark Licensing

- Canada is transferring management of the licensing of the CleanFARMS trademark to CLI for global use on the CM program
- Communications value:
 - Farmers – higher returns
 - All other stakeholders – higher awareness



CleanFARMS

EMPTY PESTICIDE CONTAINER RECYCLING PROGRAM

Every return makes a difference...

and – It won't cost you a thing!

rinse

Pressure rinse or triple
rinse your pesticide
containers

remove

Completely remove
the paper booklet
from your pesticide
containers

return

Return **clean, empty**
containers with **no**
paper booklet to
your collection site



stewardshipfirst™

CleanFARMS™

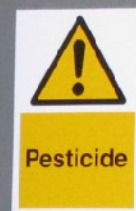




REPUBLIC OF KENYA



MINISTRY OF AGRICULTURE



Pilot Programs

- Position Paper on Criteria & Process for entering new countries:
 - Developed & Posted for Members & Country Managers
 - Eg:
 - Stakeholders identified
 - Business plan
 - Long term financing



Pilot Programs

- Three regions: Asia, Africa, Eastern Europe
 - Asia – 7 (Taiwan, Vietnam, Philippines, China, Thailand, Korea, Japan)
 - Africa – 11 (S Africa, Namibia, Ethiopia, Mauritius, Madagascar, Uganda, Kenya, Malia, Cameroon, Nigeria, Ghana, (Zambia 2012)
 - Eastern Europe 2 – Romania, Kazakhstan, (5 others being assessed)
- Criteria developed for entering new countries
- Modest financial start-up assistance from CLI





Eco-Efficiency Analysis PAMIRA

**Global CMS Meeting
September 23, 2010 - Istanbul
Dr. Marianna Pierobon
Competence Center Environment, Health & Safety, BASF SE**

User Benefit and Alternatives



User Benefit:
Collection and
recycling / disposal
of crop protecting
agents packaging,
based on 3700 tons
sold packaging

„2007“

236 coll. points; 1 x Year; Controlled recycling & incineration

„2008“

273 + 260 coll. points, 1 x Year; Controlled recycling & incineration

„2008 co-incineration“

273 + 260 coll. points, 1 x Year; Co-incineration & incineration

„2008 2xY“

273 + 260 coll. points, 2 x Year; Controlled recycling & incineration

„4.000 Traders“

Collection selling points, all year; Controlled recycling & incineration

„39.000 Farmers“

Collecting tour; 2 x Year; Controlled recycling & incineration

„Farmers 39.000 n.C.“

Collecting tour: no cleanliness control, 2 x Year; Incineration

„80.000 Farmers n.C.“

Collecting tour: no cleanliness control, 2 x Year; Incineration

General: Environmental Assessment, Costs: What is Taken Into Account?



ENVIRONMENT

- Resource Consumption
- Energy Consumption
- Emissions
 - **Water**
 - **Air** (Global Warming Potential, Acidification Potential, Ozone Depletion Potential, Photochemical Ozone Creation Potential)
 - **Solid Waste**
- Toxicity Potential
- Risk (occupational diseases and accidents)
- Land Use

COSTS

- Energy costs
- Material costs
- Taxes
- Profit margins
- Recycling costs
- Emissions trading
- Transportation costs
- ...

Six environmental categories and all real costs

Classification of Plastic for Recycling

- 6 scientific ecotox studies on plastic from France & Germany
- Tests run on daphnia & algae:
 - Shreds after grinding – some effect
 - Shreds after washing – little effect
 - Recycled product – no effect
 - European classifications becoming more stringent



Canadian study - containers recycled into farm drainage tile



-used back on the farm-



Background

- Previous studies show there is some leachability of pesticides from tile drains made from empty pesticide containers
- Leaching is very low and drops off quickly to non-detect after running water through drain
- Previous studies were only on 2-meter lengths of pipe in a lab
- While leaching was detected, only one pesticide exceeded Canadian Water Quality Guidelines - Chlorpyrifos



Conclusions to date

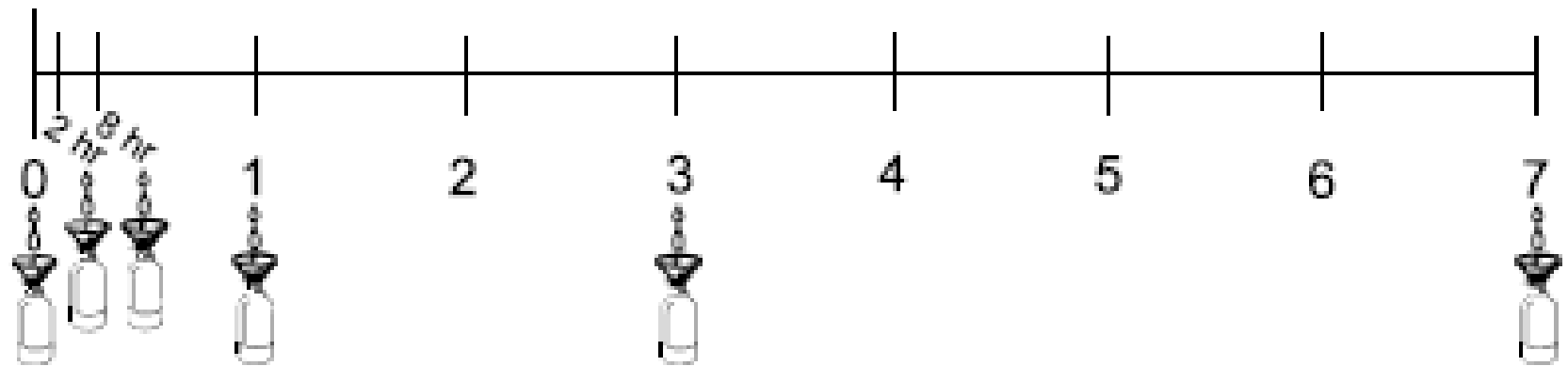
- Leachability ppt'l to:
 - Rate of flow – slower rate = higher pick-up
 - Higher number of flushes = lower pick-up
 - Lower temperature = lower pick-up
 - Length of tile... greater length = ???
(linear or will some sort of equilibrium be reached?)





Sampling Schedule

Schedule Sample Collection Days



Environment, Health & Safety

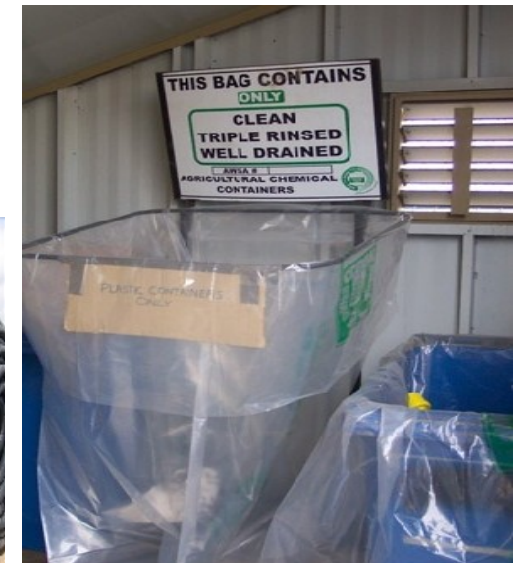
- HS&E = “Job 1”
- Stantec study in Canada
- Global recommendations



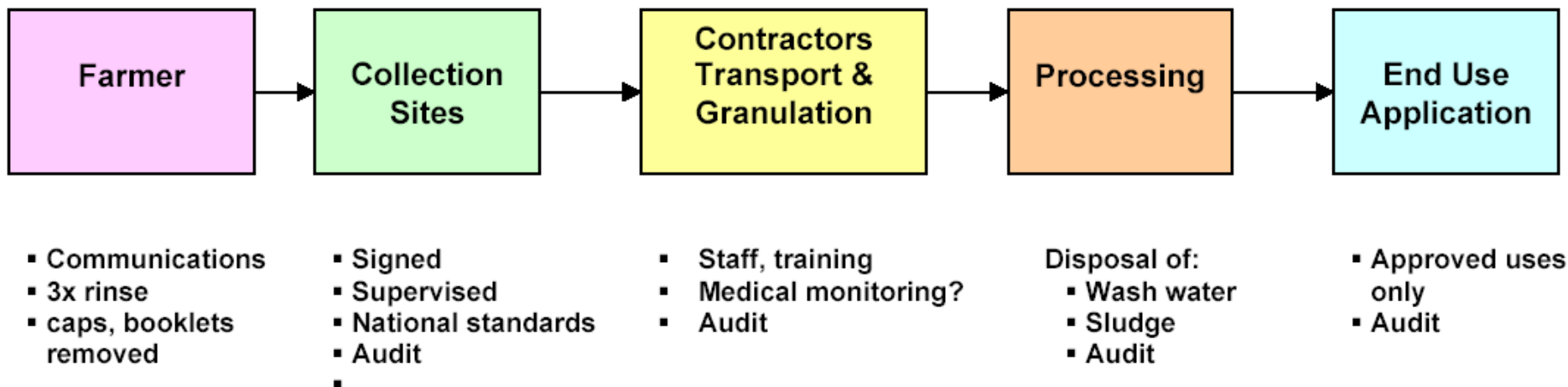
Stantec Study – Canada

Operational Review of the CropLife Canada Container Management Program

Summary of Findings and Recommendations



CONTAINER MANAGEMENT HEALTH SAFETY & ENVIRONMENTAL TESTING



End use applications

Plastic recycled into???

- Only approved end use applications
- Global list developed
- Scientific basis
- General basic criteria: only industrial applications with limited human contact





DescarBAG

15L



R323

RESÍDUOS SÓLIDOS DE SERVIÇOS DE SAÚDE





Recycling of Seed Treatment Containers

- Proposal NOT to recycle this plastic
- Incinerate or energy recovery
- Would need to separate seed treatment containers & increase levy to manufacturers

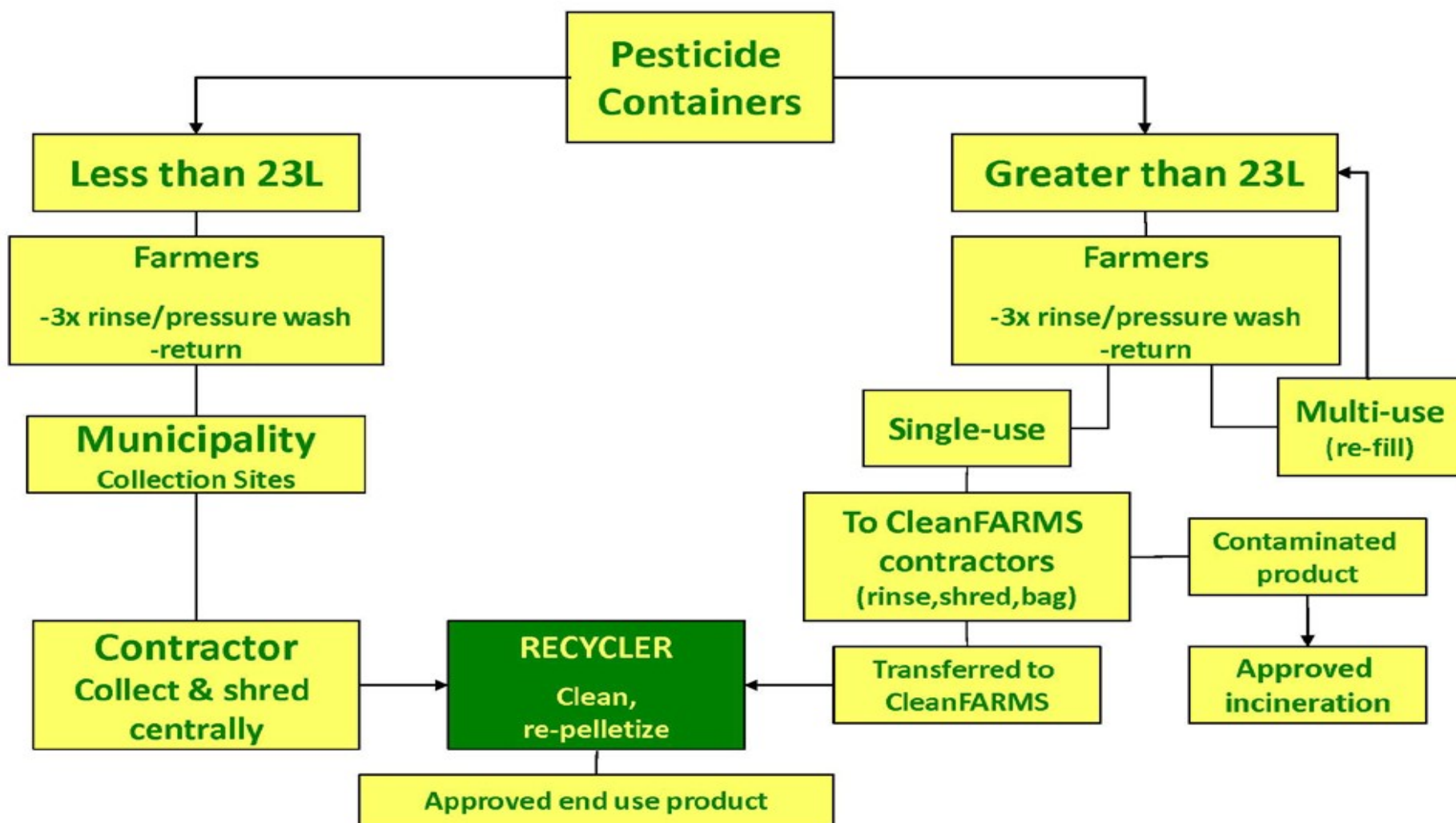


Drums, Totes, IBC's

- Develop BMP's
- Committee to address this year
 - Recycle plastic?
 - Energy recovery?
 - Other?







The challenge for agriculture...

The opportunity for us...

- Global population to reach 9 bn by 2050
- Falling ratio of arable land per head
- Climate change threatens food production in many regions
- 1.8 billion expected to live in water scarcity by 2025
- Diversifying diets in emerging economies

**We need to grow more food to feed the growing population, with a smaller environmental footprint –
& *more plastic will be used in agriculture!***



Business Models

Ramp up this objective?

- More business-like & focused approach?
- Opportunity to bring in “free riders”?
- Opportunity to handle other ag plastic?
- More efficient overall – reduce unit cost?
- New organizational structure?
- “For-profit” or “not-for-profit”?
- ***Bottom line - opportunity to reduce costs for our industry***



- Some global statistics
 - From the
 - CLI Container Management Program



GLOBAL CONTAINER MANAGEMENT

Kg

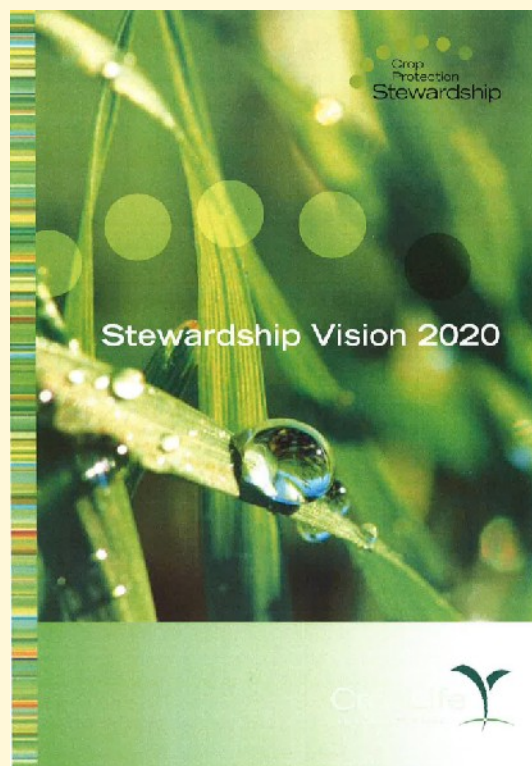


Year

Vision 2020

Progress

- Stewardship Vision 2020 developed and agreed by Stewardship Committee
- Published in
February 2011



Vision 2020

Progress

- Document ready to be rolled out across the network
- The Stewardship *Vision 2020* and CropLife's current activities and their impacts will be discussed with external stakeholders at the global Stewardship *Conference* to be held in Berlin, October 18 – 20, 2011

Thank You!
Questions or
Comments?

