



الْجَمْعِيَّةُ الْعِلْمِيَّةُ الْمَلَكِيَّةُ  
Royal Scientific Society



---

# Testing of Paint Reformulation Guidelines and the Reformulation Results

CPU-Royal Scientific Society

30.04.2020

---

# The Feedback on the Guidelines

- Guideline Mainly to
  - Ministry of Health
  - Ministry of Environment
  - Ministry of Industry and Trade
  - Jordan Standards and Metrology Organization
  - Jordan Chambers of Industry
  - Participants from paint industry (4 Companies)



---

# The Feedback on the Guidelines

- Feedback from
  - Ministry of Health (comments on translation mainly the word dirty)
  - Jordan Standards and Metrology Organization (comments on translation and terminology to be in line with JSMO)



---

# The Feedback on the Guidelines

- Their opinion
  - Terminology
  - Definitions
- What should be added or better explained?
  - Jordanian experience from the companies participated in the project.



# Reformulation Overview in Jordan

Company	Target Paints	Stages	Type	Quantity of Lead Paints [ton]	Quantity of Raw Materials Containing Lead
<b>Sipes Paints</b>	Road paints (yellow)	<p>S7</p> <ul style="list-style-type: none"> <li>• New Reformulation</li> <li>• Test at RSS Labs</li> <li>• Regarding lead is OK</li> <li>• Luminance factor (58&gt;45)</li> </ul>	Alkyd base	84 (26.5 for road)	11  (ca. 3.5 for selected paint)
<b>Golden Paints</b>	Car paints (orange/yellow)	<p>S6</p> <ul style="list-style-type: none"> <li>• New Reformulation</li> <li>• Application on car metals</li> <li>• Sent to BASF R &amp; D in Germany</li> </ul>	Solvent based		



# Reformulation Overview in Jordan

Company	Target Paints	Stages	Type	Quantity of Lead Paints [ton]	Quantity of Raw Materials Containing Lead
Tameer Paints	Road paints (yellow)	<p>S6</p> <ul style="list-style-type: none"> <li>New Reformulation</li> <li>Test at RSS Labs</li> <li>Should be reformulated</li> </ul>	Oil based		
UniChem	Withdraw from the project, because it closed. Technical paint is to replace and they are in the stage of reviewing contract				



# Reformulation Results of Selected Products (Road Marking)

Test	Alt.#1	Alt.#2	STD	Specification
Lead content	< 1.0 [mg/kg]	<1.0 [mg/kg]	Lead chromate	Requirement
Luminance factor	46.8	48.8	59.5	> 58
Opacity CR [%]	99.4	96.6	97.5	> 96
Abrasion resistance (sand: Liter)	> 45	> 45	> 45	> 45
Luminance factor/300 hrs accelerated weathering [QUV]	45.4	44.9	57.5	> 55
Fineness of grind [Hegman]	4	4	4	>3



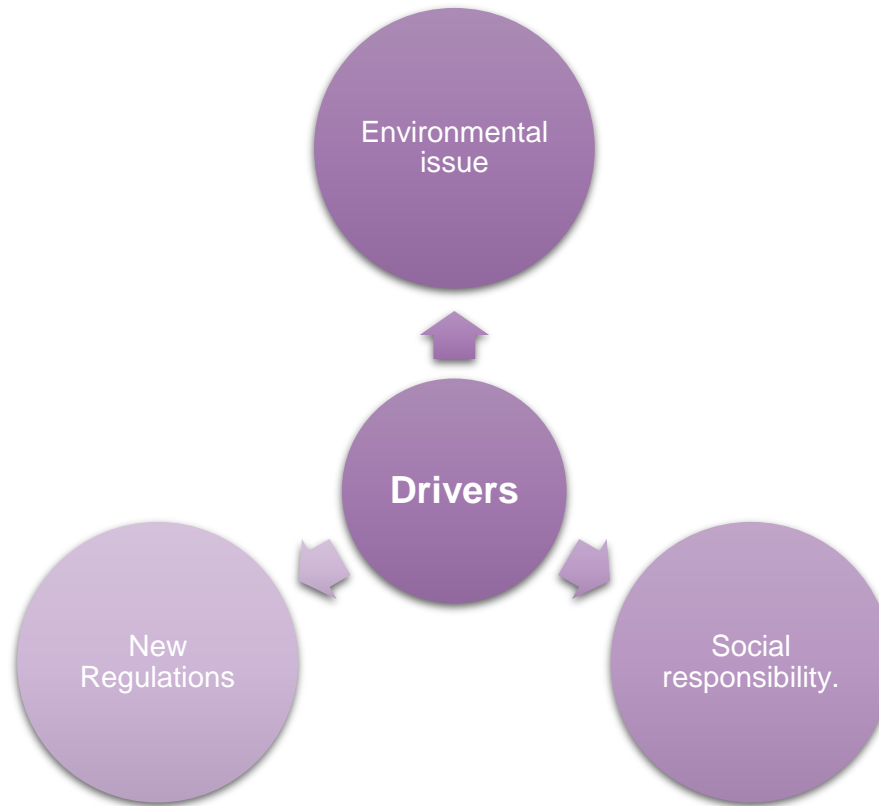
# Color Comparison





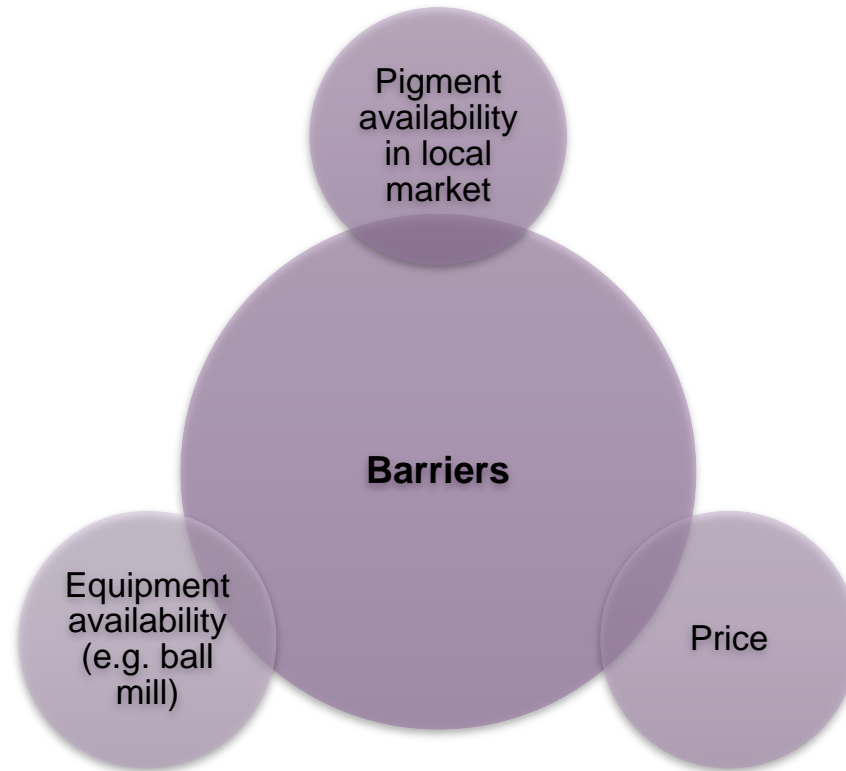
---

# Drivers and Barriers to SMEs Reformulation



---

# Drivers and Barriers to SMEs Reformulation



---

# The Economic Evaluation of Reformulated Paints



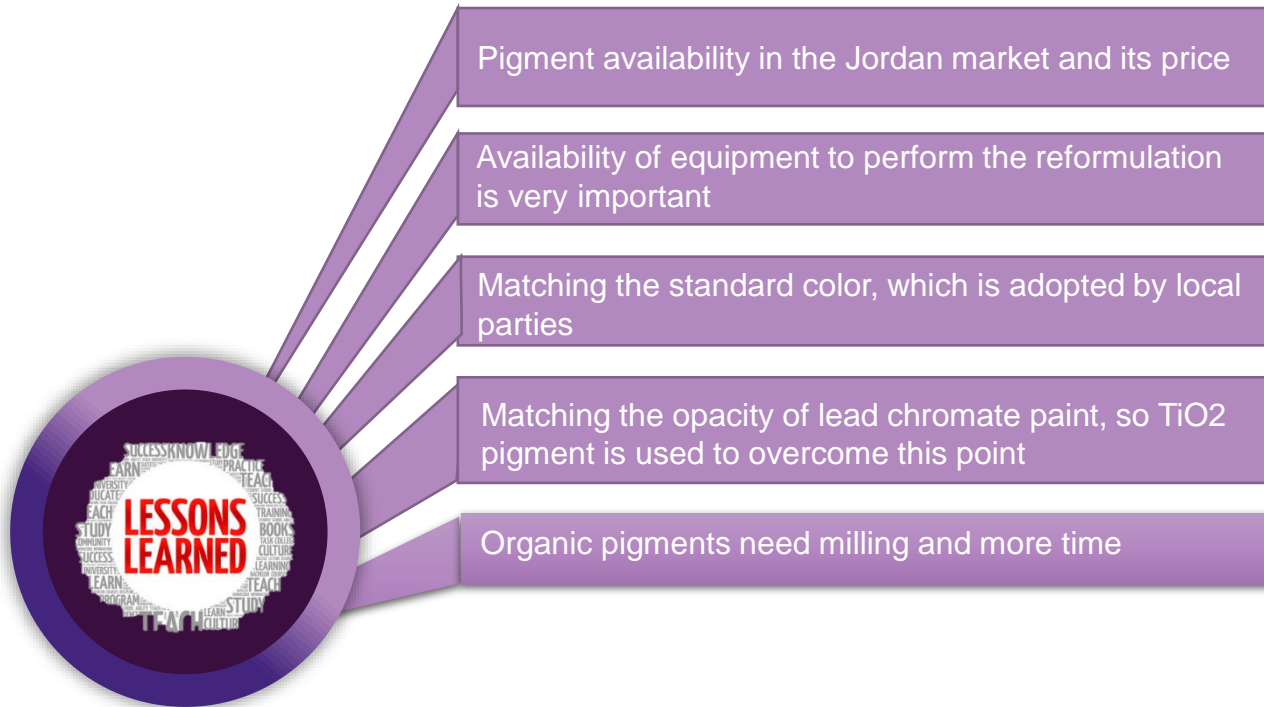
Raw materials cost increase by about 90%

Production cost: will be higher by about (x), since the production time is higher by about 200%

Product cost increase by about 30-60%



# Lessons Learned and Best Practices



---

# Influence of Lead Paint Laws on Reformulation

New lead concentration limit (90 ppm) will accelerate the reformulation activities, especially if this new limit comes in act.

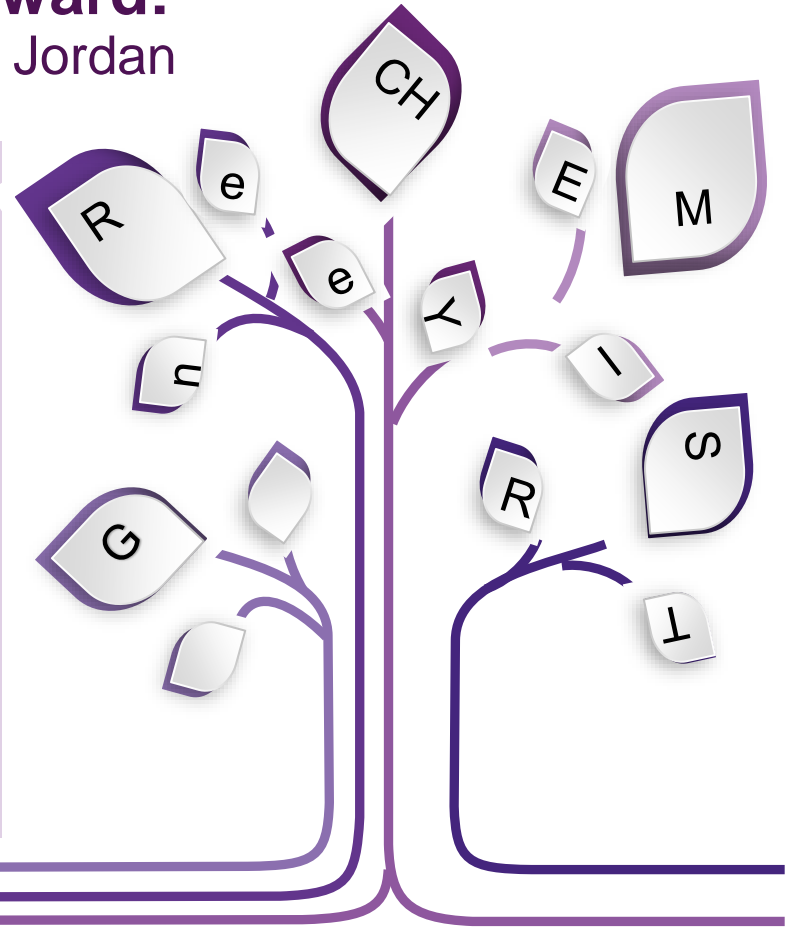


# Conclusions and the Way Forward:

Views on the future of reformulation in Jordan

## Plan to Continue Reformulation

- Continue with the other two companies.
- Continue to find new participants.
- Continue to work with the related authorities.
- Add the national experience to the Reformulation Guidelines



---

# Conclusions and the Way Forward:

## Views on the future of reformulation in Jordan



### Way Forward

- Response with the feedback on the Reformulation Guidelines.
- Modify the Guidelines accordingly.
- Expand the awareness activities





الْجَمْعِيَّةُ الْعِلْمِيَّةُ الْمَلَكِيَّةُ  
Royal Scientific Society



---

# Thank you

For further information please contact Eng. Husam Kilany

Tel.: (+962) 6 534 4701 / Ext: 2434

[husam.kilany@rss.jo](mailto:husam.kilany@rss.jo)



PO Box 1438, Amman 11941, Jordan

T (+962) 6 534 4701 | F (+962) 6 534 4806 | [www.rss.jo](http://www.rss.jo)