

# Possible Impacts on Peru based on the European Union's New Regulations on Cadmium in Chocolate

Impact on the demand and export prices of  
Peruvian cacao for the production of chocolate,  
butter and cacao powder

February, 2019



**USAID**  
FROM THE AMERICAN PEOPLE



PERU  
**CACAO**  
ALLIANCE

# The EU 488/2014 regulation has established the new maximum levels of cadmium content in chocolate bars:

- For **Milk Chocolate** with a total dry matter content of **less than 30% of cacao**, the maximum cadmium limit is **0.10 mg per kilogram of chocolate**.
- For **Chocolate** with a total dry matter content of **less than 50% of cacao**, the maximum cadmium limit is **0.30 mg per kilogram of chocolate**.
- For **Chocolate** with a dry matter content **greater than or equal to 50% of cacao**, the maximum cadmium limit is **0.80 mg per kilogram of chocolate**.
- **Cocoa powder sold to the final consumer or as an ingredient for drinkable chocolate**: maximum limit **0.6 mg per kilogram of cocoa powder**.



# Cacao derivatives



Cacao beans



Cacao liquor



Cacao powder



Cacao butter



Chocolates

# How is cadmium distributed among cacao derivatives?

## Cadmium accumulates in cacao powder

0.5 mg/Cd per kg  
of liquor



1.0 mg/Cd per  
kilo of powder

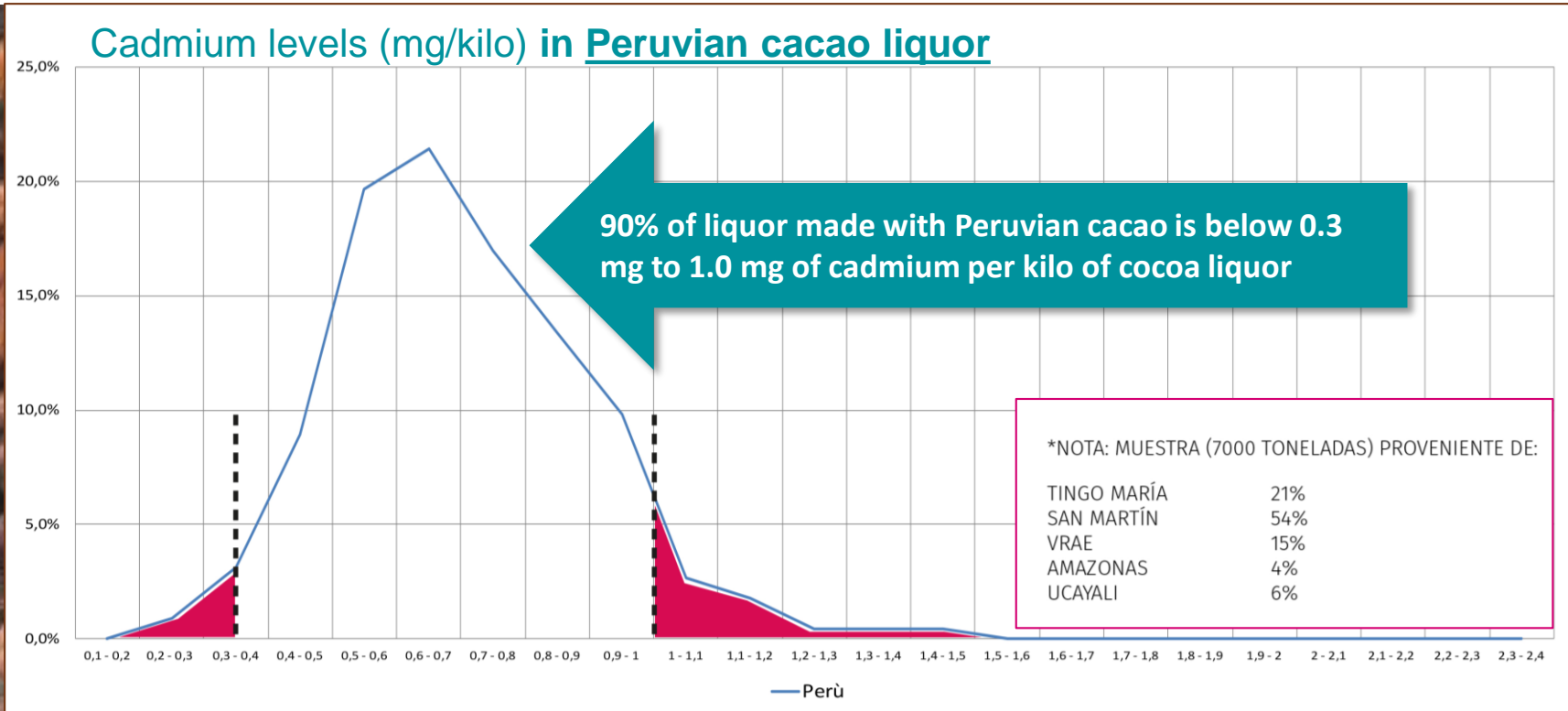


0.0 Cd per kg of  
butter



# What are the Cadmium levels in cacao of Peruvian origin?

Study Case for 7 thousand tons exported to Europe



Source: Confidential/Prepared by the Peru Cacao Alliance

**Is it possible to make chocolate with a high content of Peruvian cacao that meets the cadmium levels required by the European Union?**

**Yes**





Probable Cd contents in chocolate with different cacao concentrations

## Chocolate with 45% cacao solids

45% cacao chocolate		UE Maximum mg Cd/kg	Acceptable limit in cacao liquor
Cacao liquor	42%	0,3 mg/kg	0,714 mg/kg
Cacao butter	3%		



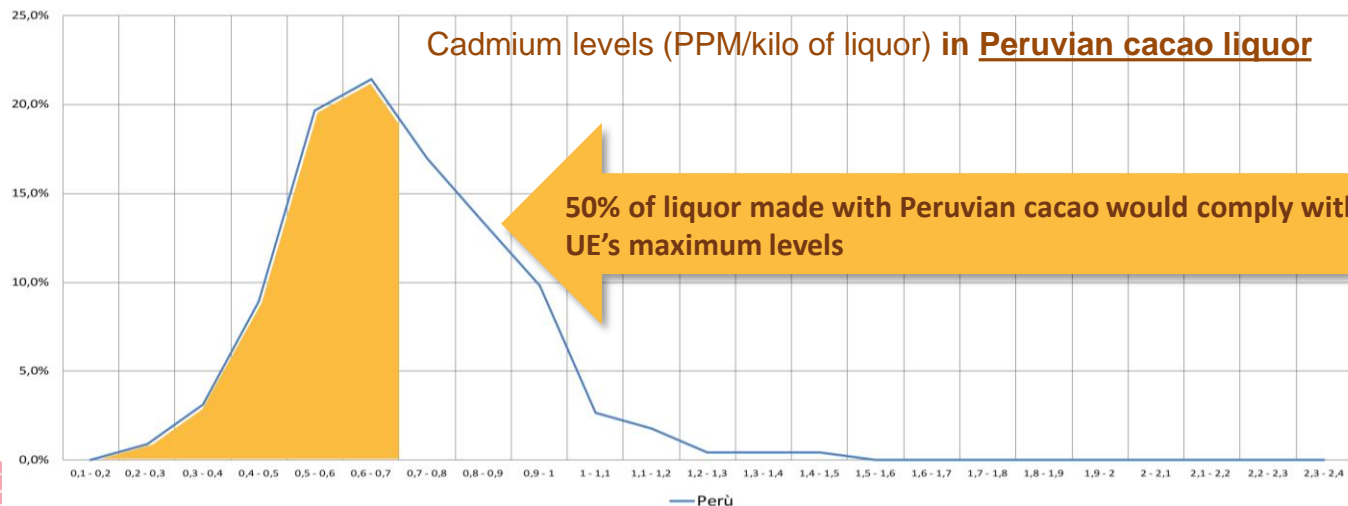
0,09 mg/kg



0,22 mg/kg



0,23 mg/kg



Source:

Peru Cacao Alliance/ICAM.

Probable Cd contents in chocolate with different cacao concentrations

## Chocolate with 70% cocoa solids

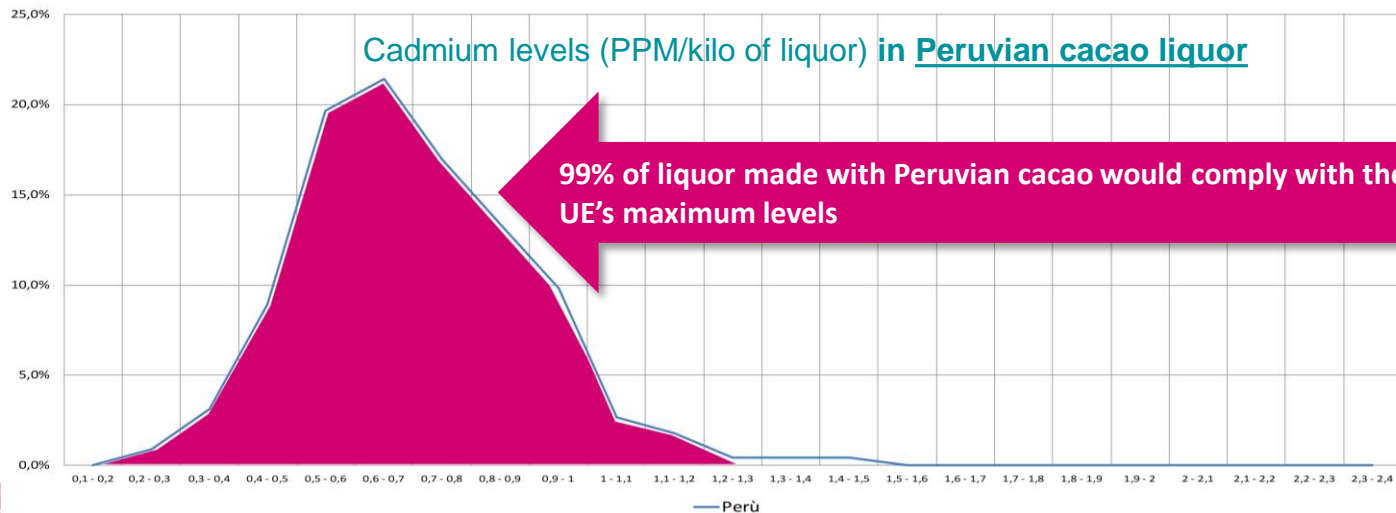
70% cacao chocolate		UE Maximum mg Cd/kg	Acceptable limit in cacao liquor
Cacao liquor	64%	0,8 mg/kg	1,25 mg/kg
Cacao butter	6%		



0,24 mg/kg



0,19 mg/kg



Source:

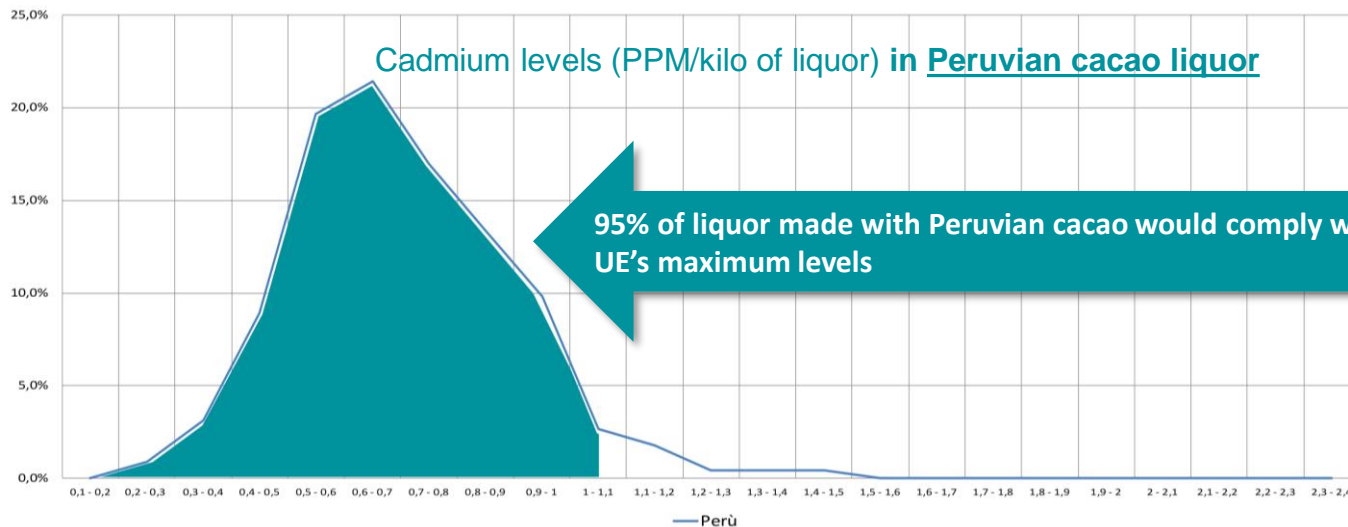
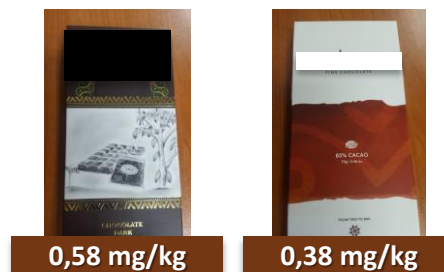
Peru Cacao Alliance/ICAM.



Probable Cd contents in chocolate with different cacao concentrations

## Chocolate with 85% dry cocoa solids

85% cacao chocolate		UE Maximum mg Cd/kg	Acceptable limit in cacao liquor
Cacao liquor	75%	0,8 mg/kg	1,05 mg/kg
Cacao butter	10%		



Source:

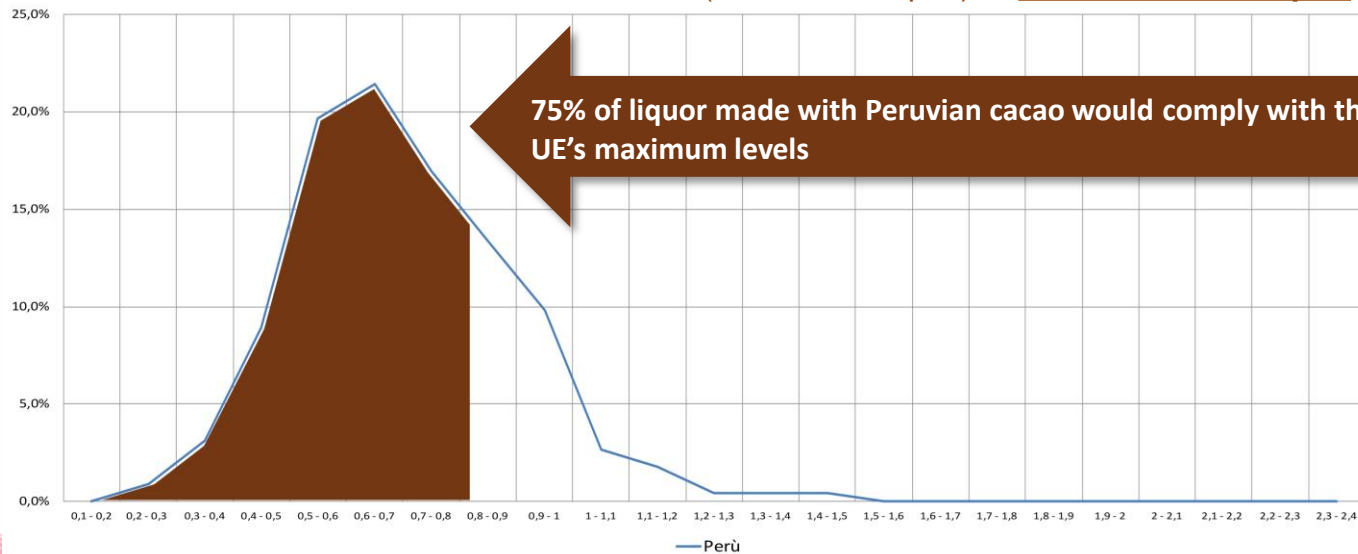
Peru Cacao Alliance/ICAM

Probable Cd contents in chocolate with different cacao concentrations

## Chocolate with 98% cocoa solids

98% cacao chocolate		UE Maximum mg Cd/kg	Acceptable limit in cacao liquor
Cacao liquor	98%	0,8 mg/kg	0,81 mg/kg

Cadmium levels (PPM/kilo of liquor) in Peruvian cacao liquor

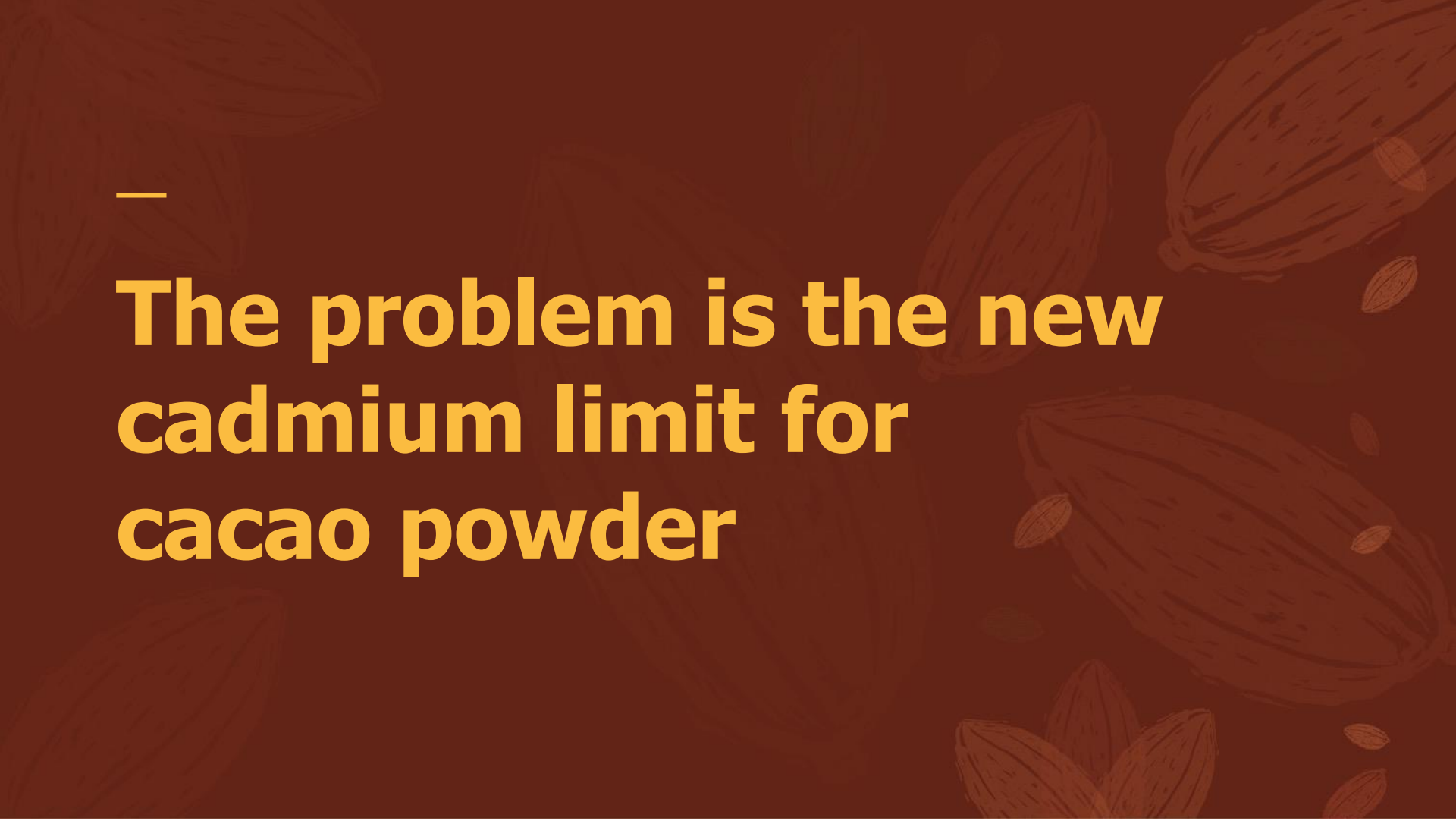


Source:

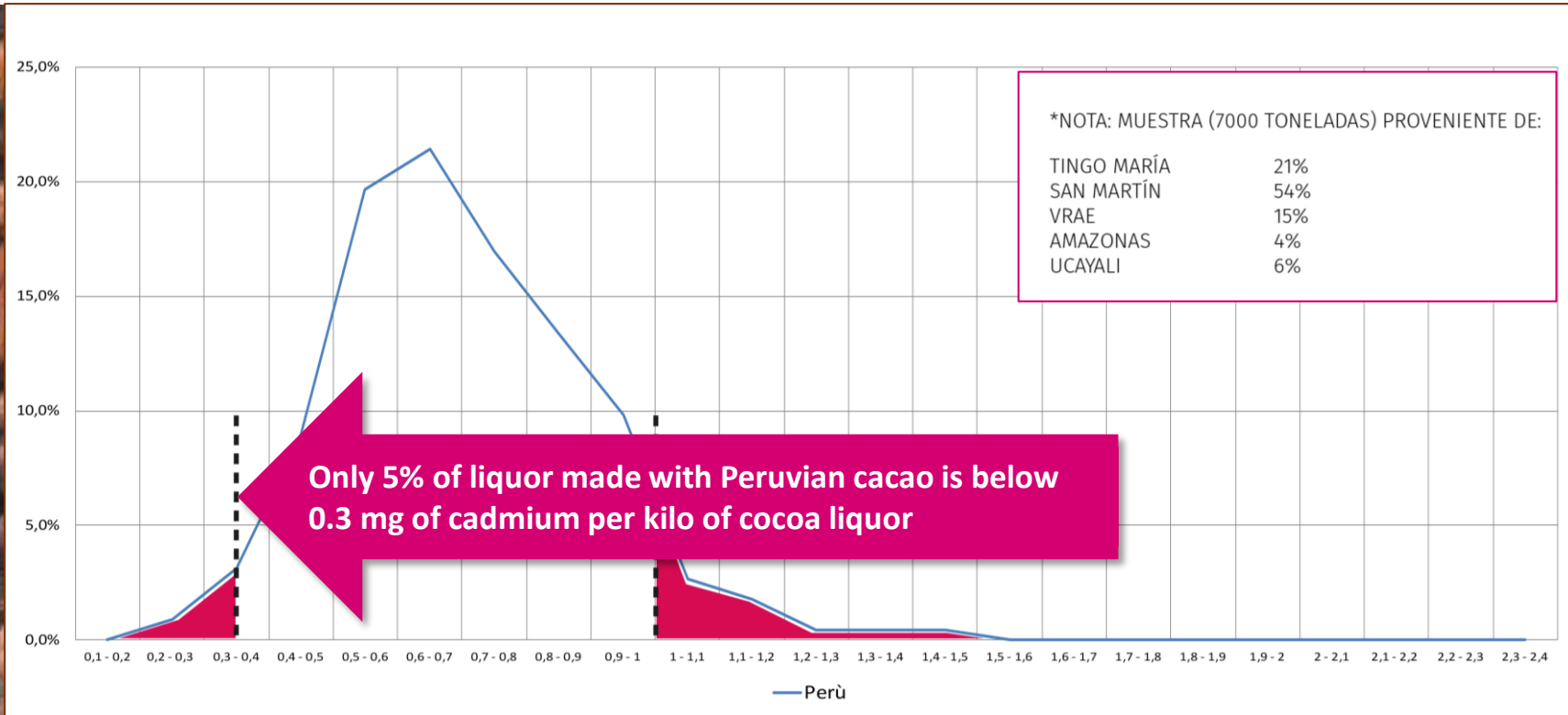
Peru Cacao Alliance/ICAM.

---


**The problem is the new  
cadmium limit for  
cacao powder**

The background features a dark brown, textured surface with several cacao pods and individual beans scattered across it. The pods are rendered in a slightly lighter shade of brown, showing their characteristic ribbed texture. The beans are smaller and also textured, appearing as if they are part of the same cacao product.

# EU: "Cacao powder sold to the final consumer or as an ingredient in drinking chocolate: limit of 0.6 mg/kg of powder"



# How much Peruvian cacao is exported for making (chocolate) liquor, butter and cacao powder?

- Peru exported 80,000 tons of cacao and cacao
  - Approximately 63,000 tons are exported as beans.
  - Some 14,000 tons are exported as intermediate products:
    - Cacao Butter: 9,100 tons.
    - Cacao Power: 3,900 tons.
    - Cacao Liquor: 1,000 tons
  - As chocolate, 3,000 tons were exported.
- 
- **(Chocolate) liquor:** 12,000 tons
  - **Butter:** 28,000 tons
  - **Powder:** 23,000 tons



# How much will this cadmium in chocolate regulation affect Peruvian cacao exports and prices?

- **Exports: 80,000 tons of cacao and derivatives**
- **63,000 tons are exported as beans**
- Some **14,000 tons** are exported as
  - **Cacao Butter:** 9,100 tons.
  - **Cacao Power:** 3,900 tons.
  - **Cacao Liquor:** 1,000 tons

- 20,000 organic and Fair Trade tons, which receive USD 900 above the stock price, will be punished and, in the best scenario, will be bought at the stock price.
- 16,000 Fair Trade tons, which receive USD 750 above the stock price, will be punished and, in the best scenario, will be bought at stock price.
- 27,000 conventional tons will be severely punished (USD 100 or USD 200 below the stock price).

- Peru would stop exporting cacao powder as no one will be able to produce cacao with a limit of 0.6 mg of Cd/kilo.
- It would not be profitable to produce butter with Peruvian cacao beans either in Peru or abroad.

- **As chocolate, 3,000 tons were exported**

- The cadmium in chocolate limits imposed would have an impact on the purchase of Peru's best cacao beans (Tumbes, Pirua, Amazonas, San Martin, Ucayali, Tingo Maria, Tocache).



# The cadmium limit in cacao powder is extremely low and threatens Peru's entire cacao processing industry...

COMPANY NAME	CACAO BEANS		CACAO IN POWDER		CHOCOLATES		CACAO BUTTER		CACAO NIBS		CACAO PASTE		CACAO RESIDUES		Total US\$ FOB	TOTAL NET WEIGHT (T)
	US\$ FOB	Net Weight (T)	US\$ FOB	Net Weight (T)	US\$ FOB	Net Weight (T)	US\$ FOB	Net Weight (T)	US\$ FOB	Net Weight (T)	US\$ FOB	Net Weight (T)	US\$ FOB	Net Weight (T)		
MACHU PICCHU FOODS S.A.C.	1,311,752	588	9,039,198	0	9,483,035	0	29,914,558	0	4,153,635	0	3,992,839	0	31,260	0	57,926,277	588
EXPORTADORA ROMEX S.A.	12,009,938	6,101	1,199,660	480			9,091,533	1,630			11,922	3	2,964	8	22,316,017	8,221
COMPAÑIA NACIONAL DE CHOCOLATES					1,438,589	0	9,192,560	1,630			354,000	3			10,985,149	8,221
<b>General Total</b>	<b>13,321,690</b>	<b>6,689</b>	<b>10,238,858</b>	<b>480</b>	<b>10,921,624</b>	<b>0</b>	<b>48,198,651</b>	<b>3,260</b>	<b>4,153,635</b>	<b>0</b>	<b>4,358,761</b>	<b>6</b>	<b>34,224</b>	<b>8</b>	<b>91,227,442</b>	<b>17,030</b>

Once the EU 488 regulation on the limits of cadmium in cacao powder is in force, the production of butter and powder made with Peruvian cacao beans will lose competitiveness and run these Peruvian companies out of business, companies that employ over 2,500 people, purchase over 50,000 tons from 25,000 small-scale cacao farmers and export over USD 58 million worth of cacao butter and powder made with Peruvian cacao.





# The CODEX proposal provides concepts and limits different to those proposed by the European Union: it differentiates between chocolate powder and cacao powder

## This could be crucial for Peru

### CODEX

- Chocolate powder with 20% and 50% of cacao solids mixed with sugars, maximum limit 0.6 mg of cadmium/kilo of chocolate powder
- Chocolate powder with over 50% of cacao solids mixed with sugars, maximum limit 1.2 mg of cadmium/kilo of chocolate powder
- Cacao powder (100% cacao solids, dry matter) ready to be sold to the final consumer, maximum limit 1.5 mg of cadmium/kilo of cacao

### European Union

- Cocoa powder sold to the final consumer or as an ingredient in sweetened cocoa powder (drinkable chocolate): maximum limit 0.60 mg per kilogram of cacao powder.



# 3 proposals were included in the draft bill on the maximum limit of cadmium in chocolate and cacao derivatives (FOOD CODEX PROPOSAL)

## NM proposal for cadmium in chocolates

Cuadro 1. Propuesta de NM para el cadmio en chocolates

Nombre del producto	Nivel máximo (NM) (mg/kg)	Parte del producto a la que se aplica el NM	Notas/Observaciones
Productos de chocolate que contienen o declaran < 30% de sólidos totales de cacao en base a la materia seca	0,10		Incluidos el chocolate con leche, chocolate familiar con leche, chocolate de cobertura con leche, chocolate Gianduja con leche, chocolate de mesa, Vermorel® de chocolate con leche/hojuelas de chocolate con leche
Chocolate y los productos de chocolate que contienen o declaran ≥ 30% al < 50% de sólidos totales de cacao en base a la materia seca	0,50		
Chocolate y los productos de chocolate que contienen o declaran ≥ 50% al < 70% de sólidos totales de cacao en base a la materia seca	0,80		Incluidos el chocolate dulce, chocolate Gianduja, chocolate semi amargo de mesa, chocolate Vermorel® / hojuelas de chocolate, chocolate amargo de mesa.
Chocolate que contiene o declara ≥ 70% sólidos totales de cacao en base a la materia seca	1,00		

## NM proposal for cadmium in chocolates

Cuadro 2. Propuesta de NM para el cadmio en mezclas secas de cacao y azúcares de venta para consumo final

Nombre del producto	Nivel máximo (NM)* (mg/kg)	Parte del producto a la que se aplica el NM	Notas/observaciones
Mezclas secas de cacao y azúcares que contiene <29% de sólidos totales de cacao en materia seca	0,4		
Mezclas secas de cacao y azúcares que contiene ≥29 a <50% de sólidos totales de cacao sobre una base de materia seca.	0,6		Incluido el chocolate en polvo
Mezclas secas de cacao y azúcares que contiene ≥50% de sólidos totales de cacao en materia seca	1,2		Incluido el chocolate en polvo

## NM proposal for cadmium in cocoa powder

Cuadro 3. Propuesta de NM para el cadmio en el cacao en polvo

Nombre del producto	Nivel máximo (NM)* (mg/kg)	Parte del producto a la que se aplica el NM	Notas/observaciones
Cacao en polvo (100% de sólidos totales de cacao en base a la materia seca)	1,5		Producto de venta para consumo final

# Conclusions

- The cadmium regulation not only unfairly makes the cacao and chocolate value chain less competitive, it also undermines the cacao business model that Peru and Latin America--with great effort--have been implementing these last few years.
- This business model is based on quality differentiation, the development of different genes which distinguishes Latin American cacao for its aroma and flavor, which is what allowed us to access high-value markets such as the European Union. Latin American cacao is sold at better prices than African cacao and it is the only way that it can survive. The African model is based on producing large volumes of cacao at the expense of deforestation and low wages.



# Conclusions

- The CODEX proposal regarding chocolate and cacao powder is far more realistic and better prepared than that of the EU. Therefore, we should be able to take the CODEX's proposal on this cacao derivative as it is much more reasonable.
- We believe that this regulation has been written without taking into account the social and commercial impact it would have. Around 500 thousand cacao farmers throughout Latin America will be forced to sell their product at a very low price under conditions that will not make it viable to continue cacao production in our region.

