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Mongolia's pastoral production system: the current situation and way forward

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- Pastoral livestock herding – international perspective
- Current situation with pastoral livestock herding
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- Results pilot testing of the way forward
- What livestock herding can achieve if put on sustainable path of development

Profile of Pastoral Livestock Herding in Mongolia

Mongolia

- 18th largest country
- altitude 1580 m, up to -25 °C
- 1.565m sq km²
- 3.2m people, 2 person for sq km²

Livestock

- 12% of GDP, & 30% employment
- Major economic activity in rural Mongolia & safety net for all in economic declines
- Pasture based (95-98% of feed balance)
- Low output/productive because of harsh natural environment
- Potential of high value (organic - free-range)
- Second largest (43%) source of greenhouse gas emissions after the energy sector (50%)



Pastoral/grass-fed livestock herding – international perspective

- The world animal product market is dominated by intensive farming led by productivity growth in countries with favorable natural endowments. No other feasible way to meet the fast growing global demand. Example: intensive grain-fed farms supply 97% of the US beef consumption
- Niche market for organic & free-range products are expanding because of health & animal welfare concerns over intensive farming products. Omega-3 acids is twice more in grass-fed beef than in conventional grain-fed beef.
- In 2015, the retail price of beef per kg in USA was USD 11 for conventional grain-fed & 17.4\$ for grass-fed organic. Organic-certified mutton from Inner Mongolia reaches \$15 in Beijing.
- Niche markets grow most fast as peoples' income and education improve. China's organic market has increased 30 times in past 10 years. This creates new opportunities for producers of such products.
- **Given harsh natural environment, Mongolia can't compete in intensive farming & productivity growth, however, it can in high value organic & free-range product market**

Current situation: Herders pursue animal numbers, why, are they guilty?

Market economy: Pursue own benefits given the existing incentive structures

Incentives imposed on herders:

- Use pastures free & no accountability for overgrazing & degradation
- No incentives for livestock & product quality improvements (flat quantity-based prices & bonuses)
- Quality standards not enforced



- Government programs for productivity improvements (animal health, breeding, risk management, value chain cooperation etc.) fail to achieve set targets because its cheaper for herders to pursue their current behavior rather than participating in the programs
- Intervention sequencing is crucial: if no strong demand from herders, resources used in productivity improvements are wasted, impacts of vaccines on half-fed animals? **Conclusion:** The institutions/incentives **dictate** herders maximizing animal numbers. **It is not their fault!!!**

Consequences of pursuing animal numbers –nobody wins

- Overgrazing & degradation of pastureland, stoppage of customary rules that safeguarded ecological sustainability (65% degraded, 7% beyond recovery)
- Declining livestock productivity because of chronic mal-nutrition (56%): In 1980-2000 live weight decreased -ewes 48 to 44, goat 35 to 33 kg, sheep wool 8%, cashmere yield 2% resulting annual income loss MINT 2.8 per HH. Rural poverty increased 27.1% to 34.9% in 2014-2016 (World Bank). The value of animals declined by 37% in 2014-2017
- More exposed to risks as emergency reserve pastures occupied
- Meat export is stagnating at less than 10% of its potentials. If the quality standards were enforced, much of the meat consumed domestically would be sold for poor quality like underweight, poor hygiene, drug residuals etc.
- Because of largely open access regime the poor losing their pastures, the rich and mining companies expanding control of pastures. As of 2016 one third of poor herders (around 50%) have no own camp sites
- Local biodiversity & tourism values declining due to land degradation
- Increased herd size caused the national GHG emissions to rise by 57.5% in 1990-2014

International organic market requirements?

- A minimum of 120 days on pastures (Mongolia: 365 days on pastures)
- Organic product means, first of all, product from fresh pastures. As pasture becomes degraded, its products lose competitive advantages of being organic.
- Key requirement -optimum stocking density on pastures (China, Russia, EU, USA standards)

Key challenges for Mongolia:

- Animal health, hand slaughtering and quality certification at international standards?
- **Overstocking is severe averaging 2.3 times nationwide, for some aimags 3-5 times**

The national pastureland grass yield per hectare averaged 240 kg in 2010-2014

Pasture area is 110 m ha, total available forage is 26.4 m tons.

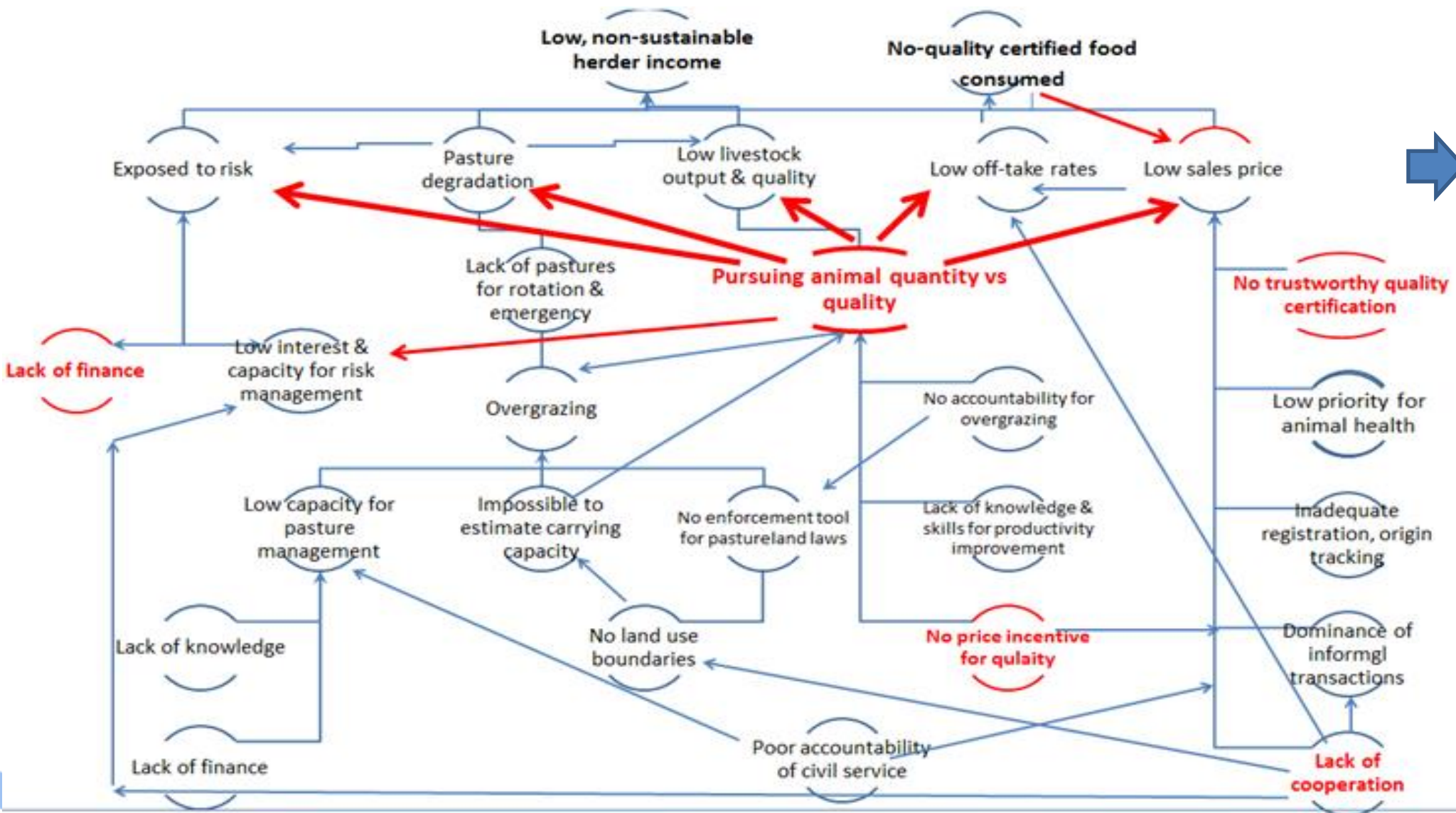
1 sheep unit consumes 560 kg implying the optimum stocking density is around 47 m sheep

Animal population in 2017 is 106 m sheep units meaning overstocking is 2.3 times.



Way forward: Identify and address the root problem

It is essential to identify & address the root problem & avoid dealing with symptoms
Herders have low & non-sustainable income. **Problem Tree:**



- **Root Problem:** Herders behavior to pursue animal number neglecting animal and product quality

Others:

- improvements
- Lack of trustworthy quality certification of animal and product quality
- Lack of finances
- Lack of organization and cooperation

Way forward: What kind of program is needed

Overall approach: Herders respond to economic incentives, education & administrative mechanisms are not sufficient. Design:

- Target the root problem in a holistic way
- Ensure participation and win-win situation for all by right incentive mechanisms
- Based on the tested best practices
- Start by small-scale with deep intervention & controlled expansion in a sustainable way

Tested best practices demonstrate that herders can adopt productivity oriented strategies and reduce the herd size if they see clear and sustainable income growth

Tested/proposed mechanisms:

- Pastureland use agreements (tested) to build herders' commitment to reduce herd size in a way that keeps income growing faster than the current scenario
 - Livestock Risk Management Fund (tested) to provide finance in dealing with risks
 - Support to value chain cooperation (tested) to gain scale economies & bargaining power in value chain activities
 - Environmentally friendly (eco) herder loan (tested) – additional financial leverage to reduce the herd size
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Results of pilot testing of program proposed incentive mechanisms

- Land use agreement /LUA/. 2009-2012, “Peri-urban rangeland” project by MCC, CPR tested LUAs for 384 herder groups keeping herders mobility. In 2015-2016 under SDC’s Green Gold project introduced herder group LUAs within pasture user groups: 17 herder groups planned to reduce the herd, 1st year target achieved for 102.5-131% for some, overall 80%
- Livestock risk management fund (LRMF). 2011 WB’s SLP, CPR piloted a proxy grazing fee as contributions to LRMF. 10-22 m collected & used for pasture & risk management.
- Service & Value chain cooperation. 2015, WB “Livestock and Agricultural Marketing Project”, piloted feeding, quality certification & selling lamb to UB premium markets, 33% higher than market price. In 2015, under Oyu Tolgoi mining company local program, tested a model for improving camel wool value chain. Margins for each player improved. Herders price increased from MNT 4000 to MNT 12000 per kg.
- In 2017-2018, under WWF program LUAs and LRMF employed in combination to reduce the herd size for 2 herder groups by 12%, 6% annually, for the first time in Mongolia.
- In 2018, in cooperation with Mercy Corps & XAC bank, CPR is testing a more holistic model with eco soft loans for herders with 12% annual interest rate to reduce the herd size and carbon emission

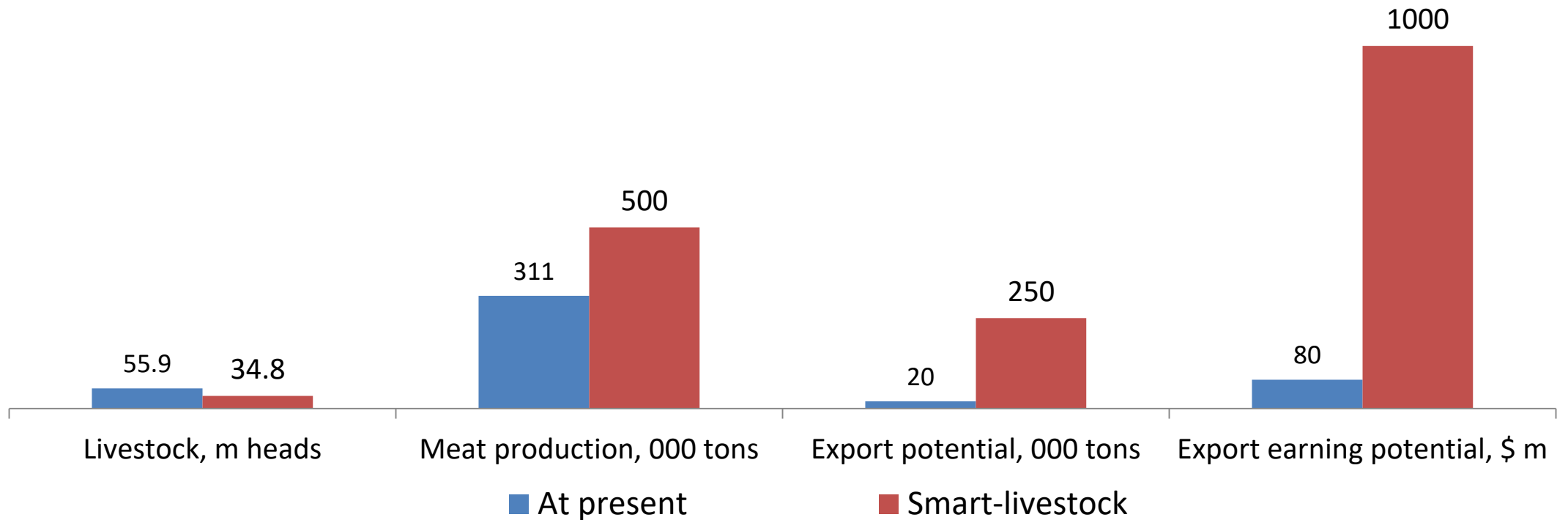
What the proposed program can achieve-average soum case?

Indicators	Base 2015	Year 1	Year 2	Year 3	Year 4	Year 5
Animal numbers, physical units*	200664	185141	170829	157632	145463	134240
Animal numbers, sheep units*	331908	308677	287106	267072	248465	231182
Sheep units per herder household	682	634	590	549	510	475
Household total income, '000 MNT	12013	19678	19039	18414	17803	17053
Home consumption, '000 MNT	2313	2313	2313	2313	2313	2313
Cash income, '000 MNT	9700	17365	16726	16101	15490	14740
Cash value of decreased herd size '000 MNT	0	3093	2892	2704	2529	2365
Income per sheep unit, '000 MNT	13.1	25.5	26.4	27.3	28.2	28.9
GHG reductions -enteric fermentation & urine and dung (tons of CO ₂ e)		315	2100	4200	6300	8400
Herder participation rate, %		3	20	40	60	80

*Projected if households in the soum participate in the program 100%.

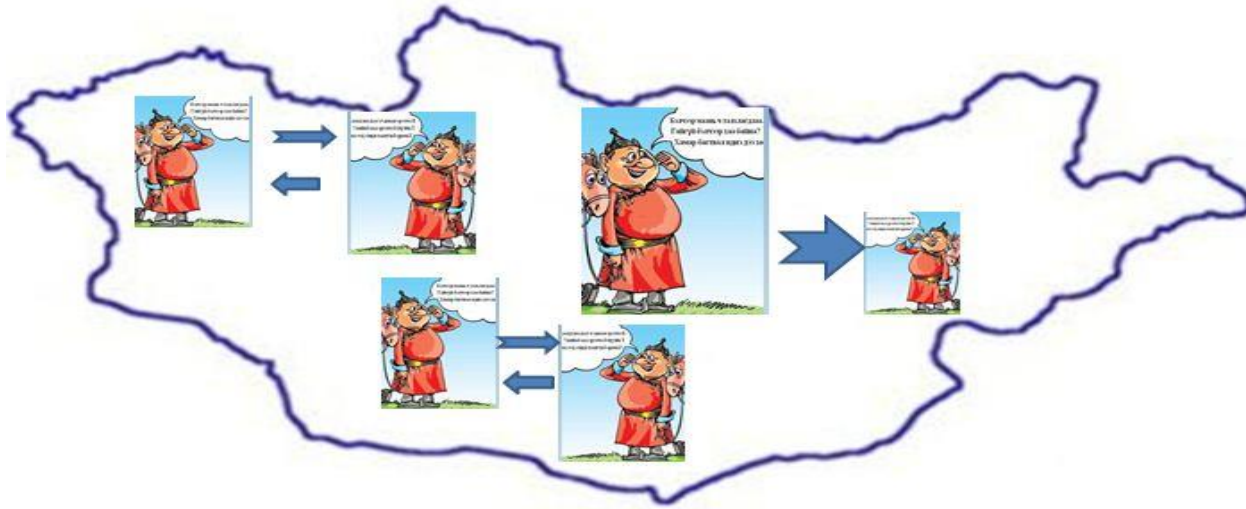
What the proposed program can achieve?

Meat production & export income



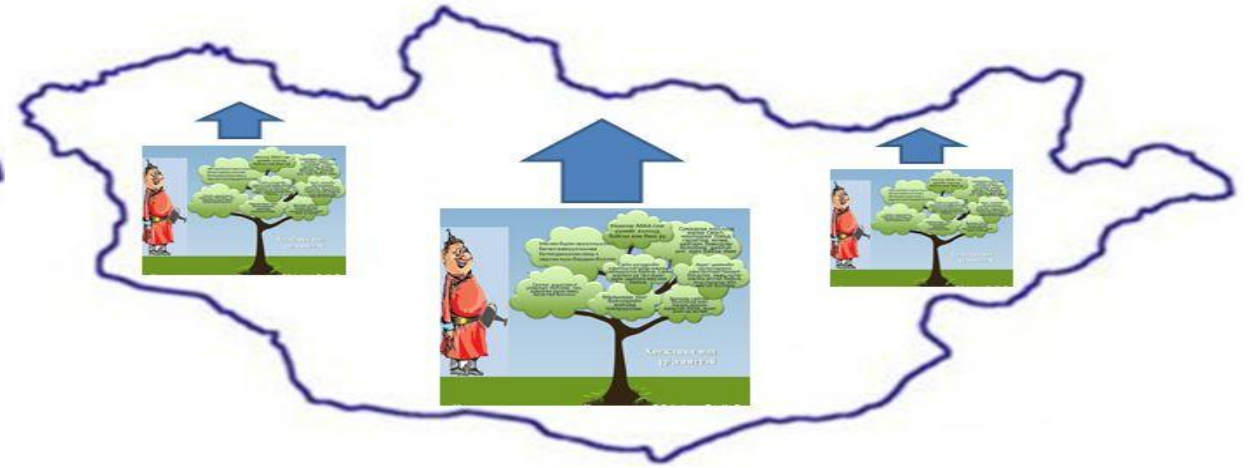
The pastoral livestock industry is capable of generating revenues easily matching the big mines (Oyu Tolgoi's copper concentrates revenue was USD 829.6 m in 2015), but differs from them as being a renewable source of wealth with appreciating value. *Source: Herd growth model estimates, CPR, 2015*

Proposed program: herders perspective



Current: Herders compete with each other for greater share of pastures and animals

Outcome: Few herders becoming number-richer short-term most lose, no increase in the national output and revenues



Each herder strives to improve productivity of of 'own' land and livestock

Outcome: Each household earns increased income & contributes to much competitive industry with increased national output and revenues

Thank you for attention

