DMAIC in the grain industry: The DEFINE phase.

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DMAIC is an acronym that stands for Define, Measure, Analyse, Implement, and Control. This is the central concept in Six Sigma. It defines a virtuous cycle that generates gradual improvement.

If you want to change something, first you have to measure it. And if you want to measure something, first you have to define it.
Do you want to get in shape? Good. How you do it? What is your problem? Aerobic endurance, core strength? No, not interested? Are you fat? Ok, then how you measure "fat"? Body mass index? Ok. Can you change your height? No? Then you have to control weight.
So, for something as mundane as getting in shape we need to think it a little bit before finding out what to do. After a few questions we define the critical variable (weight) that has to be measured. It is not straight forward.
Had we defined fat as "flabbiness" instead of "high body mass index", then we should be using some skin grab method to measure it, and the method to solve it would be lifting weights instead of dieting.
What do you want to do in your company? Make money? Ok, then you have two alternatives.
Increase sales.
Cut costs.
Increasing sales in a grain elevator is difficult, if not impossible. You are limited, physically, by the space you have. In a mill it is much easier, but the thing is that we are dealing with commodities here. For the consumer, a kilogramme of your flour is just like a kilogramme of your competitor. He will choose based on price.
In order to increase sales, you have to decrease price (if it isn't regulated) and the only way to do that is through margins or costs reductions. If you operate in a market economy, your margin is already minimum. Then the only option is B.
How do you cut costs?
Cheaper raw material, Cheaper labour, Cheaper utilities, Less waste, Lower taxes, Better logistics.
Let's analyse them:
Forget it. Grains are commodities and you will get the same price as everyone else.
Same. If you pay less you either get a worse employee or don't get it at all
You may be able to negotiate something, maybe make your own potable water or self-generate electricity. It all depends on where you operate. Some countries, like Spain, forbid self-generation. Some states in the US forbid you to collect rain water. If you have an opportunity, seize it.
This is it. Talking about grain post-harvest, up to 30 percent of grains are lost through bad conservation practices. If we talk about rice, the yield should be around 70 percent, but instead it is around 50 percent. That means another 20 percent got wasted. In any case, only around 50 percent of the harvested grain reaches the final consumer. You have huge opportunities here.
No, very unlikely. Unless you own a multi-billion-dollar corporation, you won't get any tax exemptions. And even then, it depends on whether you are publicly labeled as a good corporation or a bad corporation. If you are labeled "bad", you will have to spend a lot on Public Relations before even attempting to lobby for lower taxes
Here you can do a lot too. I have seen a lot of money lost during grain loading/unloading operations. Stealing during transportation is very common too. It would be difficult to innovate in the physical side of the operations, but strict controls could pay a small fortune.
Then, the best option to make money is avoiding waste. With grain it is very simple, as we can control everything with waste. How much grain comes in, and how much comes out. The tricky part is measuring it all against a standard. That is another reason to enforce commercial regulations.
Even if you are not going to resell grain, it is for internal processing, account it using the commercial quality standards. In a mill, you should control the three variables of your black box.
The grain that comes in, the final product going out, and the by-products going out. The sum of the outputs should equal the input. And be sure to check the quality of the by-products. It is very common to steal from a factory disguising final product as waste.
Conclusion: Define weight of the grain as the key indicator to keep track in your facility, but be careful to measure it using commercial standards that correct for the variabilities in moisture, foreign matter, and other parameters.
In a mill, weight of grain is still the main indicator. All waste should be referred to this value. Some waste is unavoidable, but you may focus on obtaining some money from the by-products of your process, which would be just like processing more efficiently. Reconstituted and fortified rice is an example of this.

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