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Biotechnology Used to Increase Food Security in East Asia

You catch a man a fish and he eats once, you teach him to fish, and he can eat forever. There is a lesson to learn in this saying. Instead of small short term efforts to fight the hunger of impoverished people through an increase in humanitarian efforts and other short term fixes an emphasis should be put on the long term. The average farmer in east Asia can expect to work ass day in the fields or paddies and have just enough food to get buy and feed his family. There should be more done to help these people and more of an effort by big organizations especially. Organizations like the UN and others need to battle world hunger. Though the humanitarian short term efforts are widely needed and should continue it is too short of a fix. The increased demand for food is growing rapidly and the supply is not keeping up. Considering most of the impoverished people in East Asia are farmers who are farming on a limited plot of land the easiest way to do this would be to increase the yield of said land. Advances in biotechnology could help make this happen. There are many bengineered crops in use today, which have increased yields, are resistant to disease, and much more. The problem seems to be however that these crops are not reaching the hands of the poor farmers who they would truly benefit the most. With impoverished farmers relying on the big commercial farmers of the United States and Europe, they put themselves at for the shock of price changes in the global market. That is why other countries need to make another humanitarian effort, an effort to spread these bengineered crops to the people who really needed them. Once this is done their quality of life will increase, the food supply will increase, and some bioenginered crops will also help with specific vitamin deficiencies.

One of the biggest things that can hurt yields for small plot farmers with almost no money is the all too common insect nuisance. Without the money to buy pesticides or finding other ways to save their crops the farmers will looses a portion, if not all, of their yield before it is even done growing. That is why one of the most effective advances in biotechnology is the use of the Bt gene. This gene has been implanted in crops all around the world and has shown amazing improvements in yield for the cotton farmers in China. The International Service for the Acquisition of Agri-Biotech Applications (ISAAA) has shown that the use of the Bt in cotton can reduce spending on pesticides by 50%, and greatly increase yields. This means the farmers are spending less and getting more per acre. That is why more funding needs to be spent on the spreading of genetically modified crops. With no insects to worry about and an increased yield your average subsistence farmer would be able to rely more on his own crops rather than turning to the global market for help. In the areas the Bt cotton has been implemented in china they have shown a great decrease in the actual population of the insects that prey on their crops also. This means that even if the farmers around them aren't using the Bt crop they will still have some benefits due to a small insect population in their region. This would increase food security and make sure there is always enough food to eat for his people.

Another great achievement in the world of biotechnology is the rice known for its golden color. This golden rice would help the people who are n a small diet of rice each day. Many different people around the world eat rice as their staple diet. The problem is that either these people eat nothing but rice and suffer horribly from vitamin A deficiency or they spend what little money they have on extra foods. However this new golden rice has been fortified with beta-carotene a precursor to vitamin A. This means that those too poor to afford other means of food besides rice will now be able to continue without suffering from vitamin A deficiency. Also those

people who are lucky enough to fortify their diets with other food will no longer have to and can spend money on other things they desperately need. This increase the generally welfare of the people and they will no longer have to worry if they have the money to buy other food to keep from going blind due to vitamin A deficiency. The only downside to this plan is that many cultures find rice that is not pure white or black in color is bad, but those who did not have a prejudice against the rice would still benefit. Again this advance would increase the generally food security of people all around the world if only more effort was put into spreading it to the people who need it greatly.

Another major achievement in the biotech world has been making crops that are herbicide resistant. A stand of rice known as LL rice has been created which is resistant to most herbicides. What does this mean for our average East Asian farmer you may ask. This means that if there is a troublesome weed problem or that some other crop has been using all of the soils nutrients it will be safe for our farmer to use herbicides if available without killing his own crops. Since rice is the staple diet in most of East Asia this could help greatly. If the soil isn't being used by other plants that means the farmer will get a greater yield and will be able to use the land for longer periods of time without moving crops etc. The LL corn is a fairly recent development from Bayer Crop sciences and hopefully they will make it readily available to those who really need it. They are currently still in the testing stage to see if it is safe. If they determine that the crop is safe and there is no risk involved we may have a huge breakthrough. If so this could have major impact on the people of East Asia. They could single-handedly create a large influx of food in a nation. If the people of East Asia have enough food that they grow themselves they will be less dependant on the global market. This would not only help them but would drive the price of foods down for the whole world. It is truly amazing what one little crop could do.

The only major problem with the widespread use of genetically modified crops is that many people find moving and replacing genes in food is wrong in a moral sense or that they could be dangerous. One of the biggest concerns in the crops that have been modified to create the Bt gene is that insects may acquire immunity to it. Like mosquitoes that acquired an immunity to DDT, a former widely used insecticide. Another major concern is that it would cause harm to those crops that don't have the gene. One argument states that if one crop has it and another nearby doesn't that all the nearby insects must then take refuge in the non-Bt crop. Another key concern is that people could develop deadly allergies to certain genes in crops. If we start using genes that are not naturally there and the government doesn't regulate the production, consumption, and testing then there is fear that some of these crops could be dangerous to people. One study claimed that after studying rats who were fed a strand of GM potatoes showed many differences in their digestive tract. There is a fear that these could have a same and or similar affect in humans. Another problem in the way is that it is hard to spread these GM crops due to large biotech companies who don't want to spend large amounts of money creating these crops with no return. If they do create these crops there is quickly a patent created and it then becomes difficult for it to be sent to the farmers who would really benefit the gene. This hurts our average farmer in East Asia because if a large biotech company in the US invents a breakthrough new crop that could increase their quality of life it may never get to them. The company would soon have a patent and be expecting full payment. This is where large humanitarian companies need to step in to set up a payment plan of some sort so that these breakthrough crops can be given to the world for widespread use. Though the biotech companies are never happy and some have even gone to the extent of adding another gene that would only allow the crop to be grown for one season. This would prevent farmers from saying they somehow accidentally obtained the seeds. Though there are many problems and obstacles to face there is no other invention that would help the average farmer in East Asia more.

One way to battle the obstacles these starving people face would be to have large humanitarian organizations put pressure on the larger biotech companies to let their crops be used in countries that truly need them. The UN should make movements to give companies like Monsanto, Syngenta Seeds, Dow AgroSciences, and other large biotech companies a helpful nudge into making their seeds available to everybody. If the powerful economic and political leaders stepped together to make this their goal they could easily get it done. Though many people are against large liberal movements, something needs to be done here. Companies need to stop worrying about huge profits and start noticing that they can make a huge difference in the world and battle world hunger. If only they could understand what it is like to live on less than one dollar a day and to eat the same meal of a small bowl of rice every day. Maybe then they would understand the cause they should be fighting for.

While there are many GM crops today there are still many more to come. Biotech companies continue to research more genes and ways to increase yields and much more. There are currently crops in the works that are shown to produce earlier which could help farmers everywhere not only in Asia. This would mean that in warm countries with a large growing season that multiple plantings and harvests could be done within one year. They are also looking at making fish that would mature quicker thus creating a gain in yield for the fishermen of East Asia. This will have a huge impact, as next to farming, fishing is the next biggest producer of feed in many Asian countries. There is also a GM crop in production that creates a plastic with unique properties. This could become a new profit plant for the people of East Asia, increasing their income and thus increasing their money to purchase food. Again this would have a great benefit everywhere and increase the quality of life for all poor people in East Asia and around the world. More advances in GM crops may prove helpful in more than addressing the issue of world hunger however. They are working on crops that may work as an acting vaccine against such disease as hepatitis B and many others that affect the people around the world. Many of these people who can barely afford food can never even imagine affording healthcare. With this advance we may be able to kill two birds with one stone.

My final suggestion would be that we need to put more emphasis on the long-term effects. We can help and help but we will never some to a solution with the rising populations putting more strain on our global food sources. As long as biotech companies continue to focus on a short-term profit we may never live to see the day when every person is fed properly. We need to put funding in the things that can truly help us and this seems to be our only way out. It has been tested time and again and people need to stop worrying about small possible effects and look at the bigger picture. If we help them grow crops with more yields, resistant to insects, resistant to herbicides, and with shorter grow cycles who knows what we could accomplish. The UN and our nations leaders need to put their foot down. They need to regulate GM crops to make sure that there is no opposition from those that believe that they are not safe and run many tests. After this is accomplished they can steadily pay the biotech companies so they can get their share of profit without starving the world to earn it. The governments of our nations can then spread these crops to the people around the world who would benefit most. I invision a world where an honest farmer in East Asia or in anywhere around the world can make an honest living with his farm and always have food on his plate. I invision a world where we would stop worrying about short term cause and effects and look at the big picture. Our population is growing and in the next few years we will have over 30 million more mouths to feed. If we continue in this fashion the epidemic is only going to get exponentially worse. The more people who receive these crops the more people who can spread the seeds from these crops and the more people who can benefit from them. If we continue on the path we are on we are only going to be heading towards disaster. These people are calling out for help and we could be the only people who could help them. If the people of the world don’t make it known what needs to be done the leaders wont get

it done, it is that simple. Whether it is small changes little by little or a large liberal movement, we need to do something about world hunger and this may be the solution.

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