The type of sand separation that you choose to put into operation on your dairy will depend on several factors.

Management is a key consideration. Are you ok with managing more mechanical pieces of equipment? Or do you have a key dealer who can help manage the maintenance on a mechanical system? A mechanical system will require an operator who is mechanically minded or a local dealer who can service it. At minimum, it needs someone to do a quick look at the equipment daily to ensure it’s operating properly. A sand lane may require less mechanical know how but to keep it functioning properly, an operator must clean it regularly. As long as the pumps are maintained and the loader is working, the sand lane can function. With a sand lane, the operator will spend many more hours of loader time moving and conditioning sand and getting it ready for reuse.

Manure conveyance is another key consideration. Sand lanes require an ample supply of process water, often from a lagoon, to move and wash the sand. If the manure is being conveyed by any means other than with water (flush, flush flume), a sand lane is not a good option.

The geographic location should be a high consideration. In areas where temperatures fall below freezing for periods of time may not be able to use a sand lane. The lanes will freeze up and become useless if the temperatures become too cold. Normally the lanes are simply too large to cover and insulate during freezing weather. In a really cold climate, a mechanical separation system is a better choice since the footprint is much smaller and it can be covered and heated.

Below are some pros and cons for each type of system:
1. Mechanical Sand Separation
   a. Pros
      i. High recovery of clean sand
      ii. Can be automated for 24/7 operation
      iii. Relatively small footprint
      iv. Suitable for all climates
      v. Can be designed for any manure system
      vi. Requires minimal fresh water
      vii. Clean sand doesn’t depend on lagoon water quality
      viii. Minimal time spent moving and conditioning sand when a dewatering screen is added to the system.
   b. Cons
      i. Relatively high capital costs
      ii. Requires regular ongoing maintenance (greasing, changing oil, replacing wear items, etc.)
      iii. Higher electric consumption

2. Sand Lane
   a. Pros
      i. Requires minimal operator interface
      ii. Aside from pumps, payloader is the only moving piece
      iii. High sand recovery
      iv. Lower electrical consumption
   b. Cons
      i. Seasonal variations in sand quality due to lagoon water variations
      ii. Large footprint
      iii. Not functional during freezing weather
      iv. Large odor potential
      v. Large amounts of loader and operator time to move and condition sand.
      vi. Large stacking area required to store sand
      vii. Large inventories of sand tied up in dewatering and conditioning.